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JULY 17, 1967

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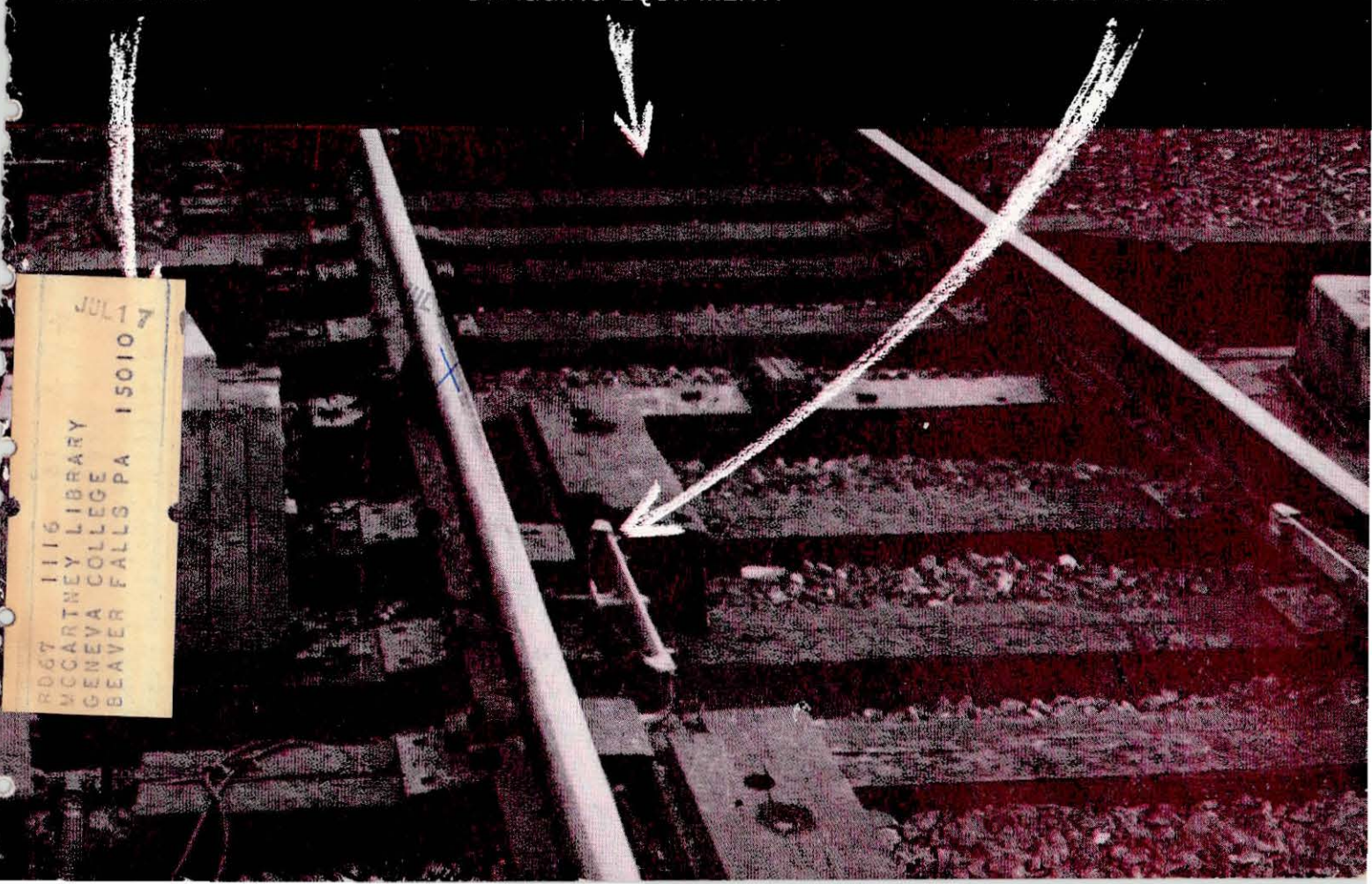

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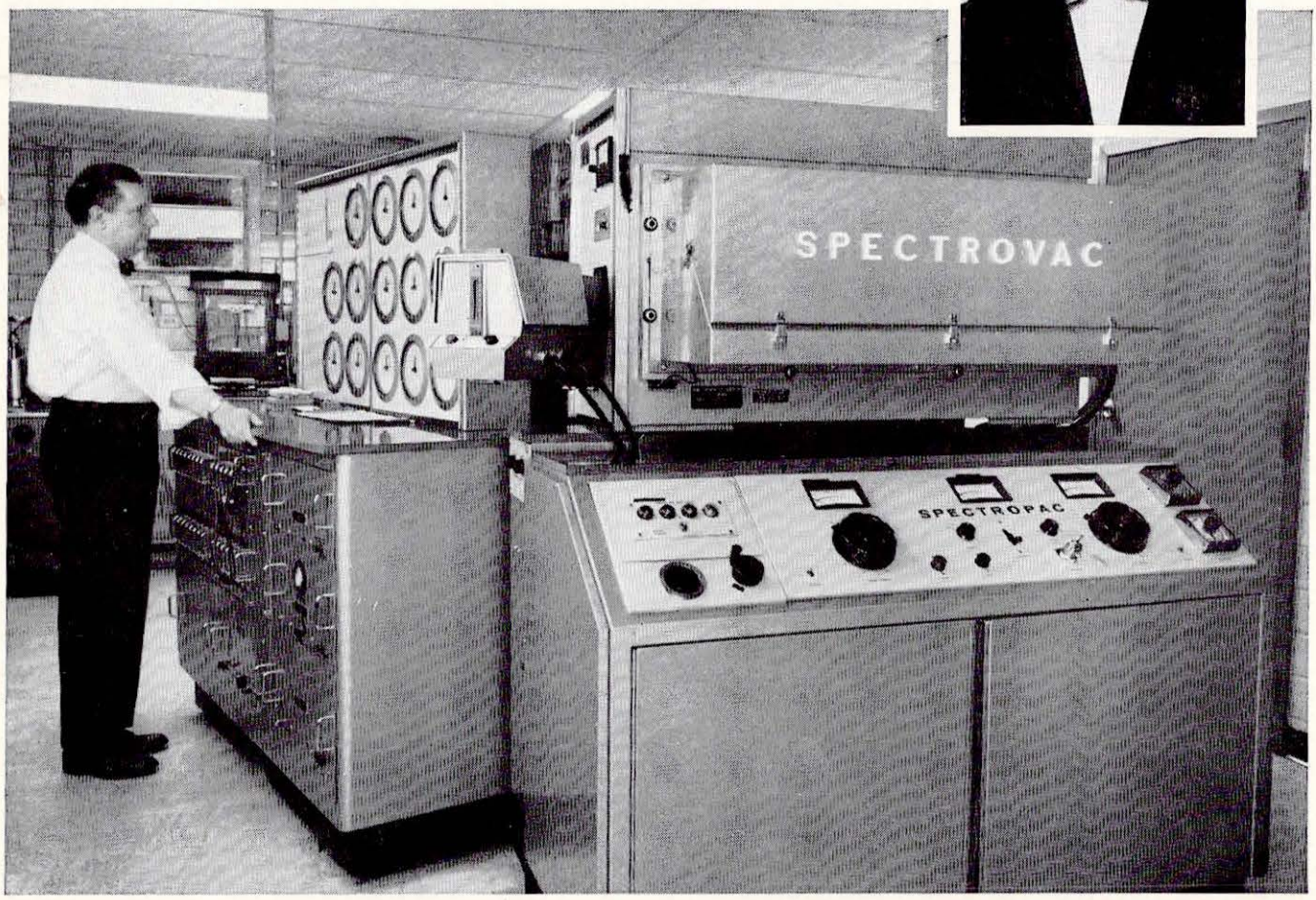

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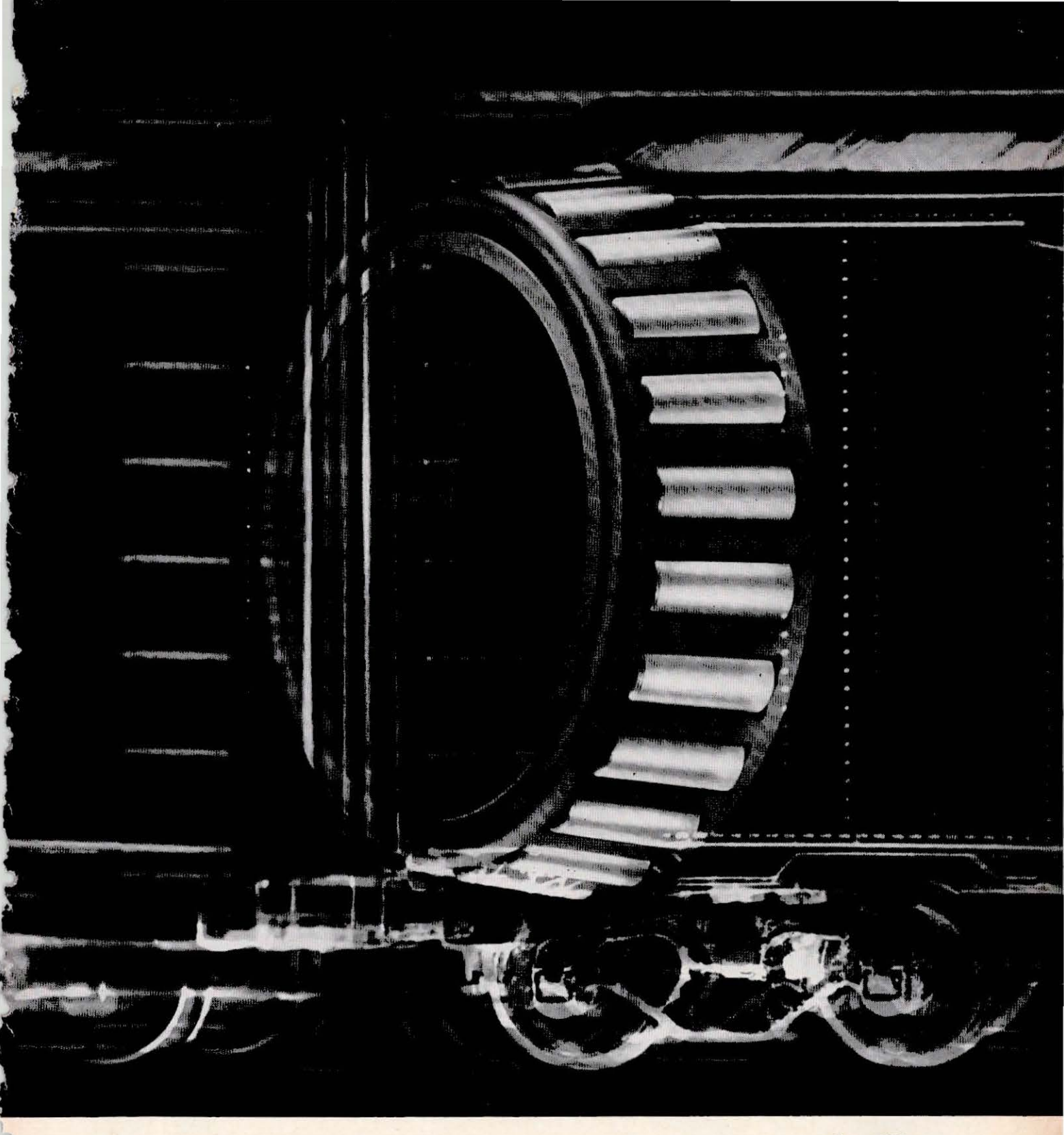

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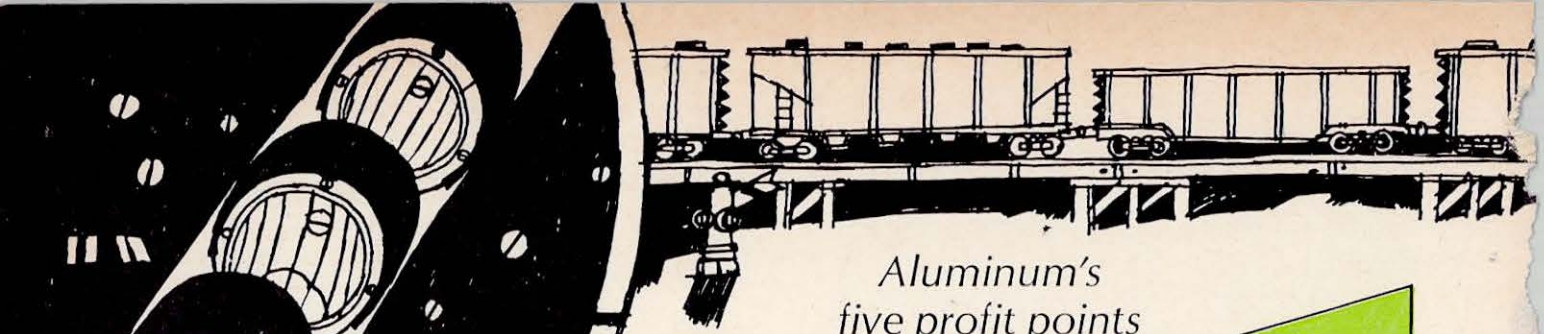

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RAILWAY AGE July 17, 1967 • Vol. 163, No. 2

THIS WEEK

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The Montreal sessions, set for Oct. 1-6, will draw experts from railways and universities all over the world.

15 What are detectors telling you?

More than 8,000 electronic trouble-spotters are now in use on U.S. railways. They're more than paying their way.

22 SP's new cut-off line: A time-saver

The ingeniously-engineered new line bypasses the congestion of Los Angeles, is 46 miles shorter than the existing route.

26 How Southern Pacific did it

Construction of the new Palmdale-Colton cut-off gave SP the opportunity to try out new methods and new equipment.

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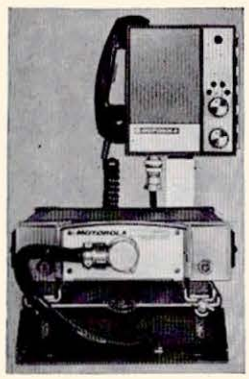

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SHORT AND SIGNIFICANT

IC and GM&O resume lapsed merger talks

Merger talks that lapsed between Illinois Central and Gulf, Mobile & Ohio after a 1962 opening were resumed July 7 in New Orleans. No definite decisions were reached, but further conferences are planned, according to a joint statement by William B. Johnson, IC president and Glen Brock, GM&O president. With about 20% of outstanding shares, IC is the largest GM&O stockholder. IC would gain access to two new major points: Kansas City and the port of Mobile. The merger would follow IC's stated policy of concentrating on a strong north-south rail system and avoiding involvement in the western rail merger movement.

●

Santa Fe expands K.C. class yard

The Santa Fe will spend $12 million to add an eastbound computerized-retarder classification facility to Kansas City's Argentine yard. Already under way, the project will include a 6-group, 48-track classification yard, a 10-track receiving yard, a 9-track departure yard, a 20-track transfer yard, and relocation of the road's double-track main line. The expansion will supplement the existing retarder yard built in 1949, subsequently computerized, and now used mainly for westbound traffic.

●

Lehigh Valley places a big new bet on TOFC

A new 13-acre piggyback and auto-unloading facility is being opened by the Lehigh Valley in Jersey City, N.J. Paved, lighted and fenced, the new facility has two tracks for piggyback (each with a capacity for eight 89-ft cars); two tracks for auto-rack cars (each track accommodating five 15-auto cars); plus a parking area for 1200 automobiles. The new yard is replacing a smaller piggyback facility at Grand Street, Jersey City; it will not affect operations at the road's principal TOFC terminal in Newark. Said LV President John F. Nash: "Shipper response to our services has well justified our expenditures for improving clearances through tunnels and under bridges all along our line from Buffalo to Jersey City to handle the multi-level auto carriers and large truck trailers."

●

Coal tonnage may rise as oil sources dry up

Can U.S. export coal help fill the Western Europe power gap created by the Middle Eastern crisis? The July issue of the authoritative Petroleum Press Service suggests that this may be the case. Noting that the Israeli-Arab war has spurred efforts in Europe to find new or alternative sources of fuel, PPS suggests coal, natural gas and nuclear power as possible substitutes. By 1975, says PPS, this displacement of imported oil could reach the equivalent of 6 million barrels daily. The oil industry magazine notes that the 21 million tons of coal now exported annually by the U.S. to western Europe "could be easily expanded." As PPS sees it: "The current delivered cost of U.S. coal in northern Europe works out at $12.88 per metric ton of coal or $2.67 per barrel of fuel oil equivalent. It might be brought down to $2.18 a barrel for large volume exports, at which it could compete with and undercut heavy fuel oil in most countries of Europe under the present tax structure."

●

Carloadings lowest since December 1963

Revenue carloadings for the week ended July 8 dropped to 405,594 cars—lowest since the week ended Dec. 28, 1963. The 1967 loadings were down 8.9% from the corresponding 1966 week, and 9.6% from the 1965 period. Piggyback continues to supply the lone bright spot in the traffic picture: loadings for the week ended July 1 totaled 24,352 cars.

MONDAY MORNING REPORT

The image: How good, how bad?

Ever since the sparks from the first steam locomotive set the first brush fire in some farmer's field, railroads have had an image problem. Over the past several years, most observers would probably have guessed that the problem was easing. But certain events of the past several weeks don't seem to bear out such optimistic theories. And railroad men are starting again to crank up the worry machine.

Problems crop up in several areas

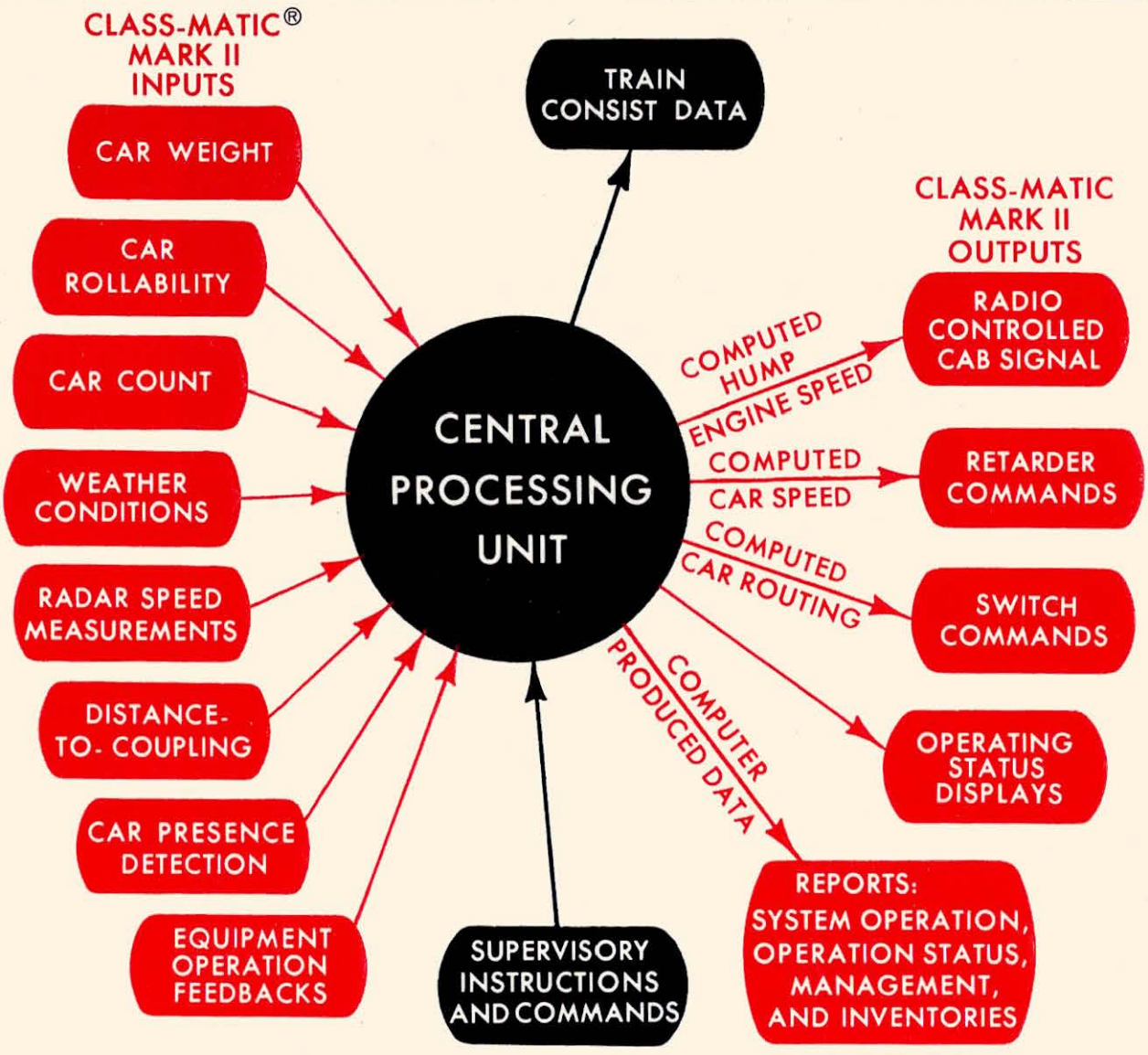
In bits and pieces, the causes for concern can be assembled. On at least two occasions recently, the industry has taken its lumps, rather publicly, from a most significant source, the Department of Transportation as represented by Federal Railroad Administrator A. Scheffer Lang. Then, two major rail cases are loose in the nation's capital—one dealing with price increases, the other involving a possible rail strike. Regardless of the justifications for the industry positions, image tends to suffer. For individual roads, there are still individual problems—many of them seemingly related to an inability to shake off fixed ideas rooted in the past. For instance, recruiters, railroad-industry probers into campus dealings, are still finding bright under-grads and graduate students looking askance at the prospect of railroad employment. And, while some of the reasons for campus apathy are complex, others are pretty simple. A personnel administrator was talking a few days ago about his experiences in trying to hire people with advanced degrees for key jobs in a key department. The effort netted one man. Curious, as well as disappointed, this personnel officer set out to find reasons. And he discovered that the usually-suspected factors didn't seem to swing much weight. The graduates weren't really putting the railroads down on grounds that the pay was too low, advancement too slow, future bleak and so forth. But comments relating to the creature comforts got a good play—and the personnel people found that today's graduates don't really want to go to work in a barn of a place, with antique furniture, less-than-adequate lighting, no air conditioning. That, the personnel administrator sighed, is bad image showing up in rather concrete form.

For the public, a distorted picture

AAR President Tom Goodfellow puts his finger on one major aspect of today's over-all problem: "The public is hearing much about our industry nowadays from merger hearings, train abandonments, labor disputes, rate cases. And the picture the public sees as a result of this publicity is not always so nice. It's often badly distorted, with stress on our problems and differences and little attention to rail achievements and the big strides we're making through cooperative action." And, as Goodfellow adds, "We can do much better than that."

For the industry, a closing of ranks?

Western Maryland President W. Arthur Grotz is even more blunt. The railroads, he declares, need a common front—and maybe a Messiah, because "despite its glaxy of brilliant stars, the industry languishes for lack of a compelling leader." High on Grotz' list of things to do is the resolution of internal differences: "Whatever the initial cost or dislocation, we, men and management together, must jointly cut through the legislation, regulations, practices, work rules and prejudices, the prides, jealousies and personal piques, that limit comprehensive and aggressive action. Investors and shippers both are deeply affected by 'atmosphere.' They are repelled by indecision and divisiveness. They are attracted by positiveness and accomplishments. We can present this face—if we will."



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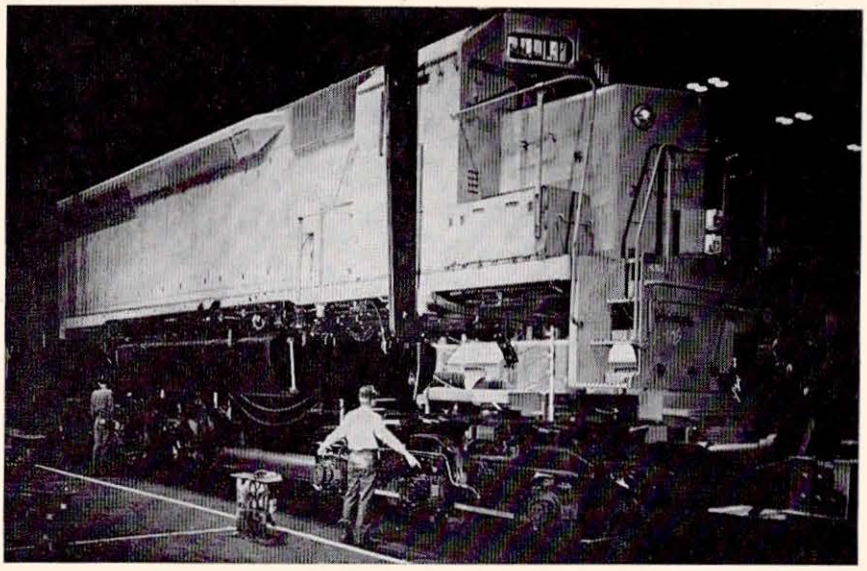

GREATER HAUL

with fewer units... powerful new diesels are pulling the railroads ahead

The new breed of diesels offers dramatic evidence of the resurgence of the railroads as a *growth* industry. These powerful new units, many of them 6-axled and running as high as 3,600 hp, are moving vast tonnages of freight over all sorts of terrain—expeditiously and at relatively low cost.

Despite the fact that the railroad diesel fleet decreased by 654 units in the last five years—total tractive effort increased by 35 million lbs. 1,362 new units went into service in 1966, only slightly under the 1965 figures. Again, efficiency ratings ran high, with an increase in average tractive effort over a space of one year, of 1,226 lbs. *per unit* for the entire diesel fleet.

The locomotive builders and the suppliers of a host of modern diesel components—have a proud story to tell and their favorite medium of communication is the Railway Age Group. Likewise the suppliers of the fuels and lubricants that keep this giant power running smoothly and trouble-free, are regular users of these publications. Significantly, in 1966, the Class I roads spent $368 million on diesel fuel oil and it is estimated that the 1966 bill for diesel lube oils and greases approximated $20 million.

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WEEK AT A GLANCE

Reading, Penn-Central open (and close) merger talks

That romance between the Reading and the Pennsylvania-New York Central was a short one—and more bitter than sweet. This was the timetable of events: (1) On July 7, the Reading put out a nine-line press release quoting President Charles E. Bertrand as saying that conversations were being held between the Reading and the Penn-Central "with respect to the terms under which Reading might withdraw its objections to the Penn-Central merger, including such terms as traffic protective conditions and possible inclusion in the Penn-Central system if Reading is not included in the Chesapeake & Ohio-Baltimore & Ohio System." It was subsequently reported that Penn-Central had offered, on June 29, to talk merger with the Reading. (2) On July 11, President Gregory S. DeVine of the Baltimore & Ohio/Chesapeake & Ohio issued a statement noting that the B&O owns 38% of the Reading and "would not approve any plan for inclusion of Reading in the proposed Penn-Central system." He added that Penn-Central had initiated the talks with Reading and that B&O had not participated. He also pointed out that the Reading, along with four other roads, would be included in the proposed C&O-Norfolk & Western merger, under the so-called "Doreco" plan. DeVine said the Reading should have temporary protective conditions from the Penn-Central "but any form of inclusion of Reading in Penn-Central would be clearly contrary to the public interest." (3) A few hours after the DeVine statement hit the Dow-Jones ticker, Reading President Bertrand announced that the Penn-Central had withdrawn their June 29 offer to talk merger. And the shortest railroad merger talks in history seemed to have come to an end.

Suppliers support railroad plea for rate hikes

The railroad industry's bid for freight-rate increases calculated to yield about $338 million a year is now before the ICC for decision. The case, docketed as Ex Parte No. 256, reached that stage last week after the Commission heard eight hours of oral argument by counsel for the railroads and other interested parties, most of the latter being against the proposed hike. Railroad pleaders at the argument were headed by Edward Kaier, general solicitor of the Pennsylvania. They had two hours in which to state their case. Times ranging from five minutes to 15 minutes were allotted to counsel for 40 other interested parties.

The National Industrial Traffic League filed a statement in lieu of oral argument as did the Railway Progress Institute. The former took no specific position. Its statement argued generally that the railroads have the burden of showing that their situation warrants the revenue relief sought with due regard to services they are offering and the impact of their proposals on shippers and the public generally.

RPI's statement, filed by President Nils A. Lennartson, argued that the railroads must earn enough to allow continued "substantial and absolutely vital capital investment." On that basis, Lennartson urged favorable Commission action. "We in the supply industry," he said, "are certain that the good of the nation requires that railroad transportation continue to modernize and improve in the years ahead."

Early action may be expected—at least on an interim decision to prevail until the Commission makes its final determination. Interim relief has often come in general rate-increase cases. And Commission Chairman William H. Tucker said recently that some determination should be made "within weeks" after the close of oral argument.

Coordinated Associations plan '68 exhibits

The 1968 convention of the Coordinated Associations, consisting of the Air Brake Association, Car Department Officers Association, Locomotive Maintenance Officers Association and Railway Fuel and Operating Officers Association, will be held at the Sherman House, Chicago, Ill., Sept. 28, 29, 30 and Oct. 1 and 2. Exhibits in the Sherman will be on the mezzanine floor and in the lower exhibit hall. Track exhibits, consisting of rolling stock, highway trailers and locomotives, will be at the South Water Street Yards of the Illinois Central Railroad.

SP seeks air-freight forwarding arm

Southern Pacific has requested Civil Aeronautics Board authority to enter the air-freight forwarding business, and has filed for incorporation of a new subsidiary, Southern Pacific Air Freight, Inc. The new company would pick up, consolidate, deliver to air carriers, and pick up at destination airports—all for one charge. At cities not served by Southern Pacific, both U.S. and foreign, arrangements would be made to handle pick-up and delivery. Said B. F. Biaggini, SP president: "We believe that the service we propose would open great new markets for air freight by building additional business for air carriers and by making air freight service feasible to many communities that do not have it now. It would combine air and ground transport in a new, integrated service, providing fast, efficient service for thousands of shippers who cannot now use it." Biaggini noted that SP's trucking subsidiaries now serve 63 regional airports "and thousands of freight generating points surrounding them." He added: "It will be our policy to promote air freight under this new concept just as vigorously as we have promoted the other forms of transportation that we've entered." Already highly diversified, SP operates refined petroleum product pipe lines, and recently announced plans for a 275-mile coal-slurry line.

GUS WELTY'S LINES ON LABOR

WELTY

NO SONIC BOOMS were reported from the vicinity of Cedar Rapids, Iowa, on July 7. Nor were there reports of nuclear explosions, volcanic eruptions or other such disturbances. Still, the meeting of chief executives of the ORC&B, BLF&E and SUNA must have been an interesting one— to say the absolute least. These are the chiefs who had been giving promise of pulling off the first effective amalgamation of rail labor unions. And there they were, in session on the ORC&B's home grounds—a matter of days after the ORC&B suddenly called a halt to the merger negotiations. Any self-respecting labor writer would have given his tape recorder to be there.

WHAT REACTION was there to the ORC&B decision? BLF&E President H. E. Gilbert, ordinarily an outgoing individual with a ready comment on the status of things, isn't talking about this one. His comment is ready, all right: "No comment." For SUNA President Neil P. Speirs, the situation may be even tougher. Speirs headed into the '67 SUNA convention July 10—with a merger that looked so good now looking like no merger at all.

CAN ANY GOOD come out of the blow-up? Maybe—but it now seems to be up to one of the Big Two in rail labor to seize leadership. That would be, of course, either the Brotherhood of Railroad Trainmen or the Brotherhood of Railway Clerks. Both are pro-merger. Both have been talking with other unions regarding merger. Both, however, also share what appears to be the stigma of bigness—a stigma which disturbs craft-union people these days far more than it seems to disturb most other folks.

IT'S NO REAL SECRET that officers of the BRT have been talking with officers of the organization that blew the whistle on the ORC&B-BLF&E-SUNA amalgamation. It should be no secret that officers of both the BRT and the BRC have talked with people from one of the other major non-operating unions. Maybe there's been progress, and maybe there hasn't. One is reminded of a comment made some time back in connection with a big union's merger talks with a small union. "Migawish," said a representative of the big union "*they* want to take *us* over."

FIERCE INDEPENDENCE is just fine, if you're fighting tyranny. A 50-50 partnership is highly regarded in such things as marriage. Lions may bunk with lambs, and mice may scare the trunk off an elephant. But in the business world—and unions are very much businesses—the consolidation of different enterprises more often than not is described by such phrases as "was merged into" or "took control of." Nobody really likes to be "absorbed"—but the business world has adjusted to it. Offhand, it would seem that the brotherhoods can pay no less attention to the realities.

Cybernetics symposium coming

North American railways will play a major part at Montreal.

Cybernetics—and what railways can do with this new approach to railroad planning and control—is soon to be the subject of a second international symposium. Dates are October 1-6. Place is Montreal. Co-sponsors are the International Union of Railways (UIC) and the Canadian National.

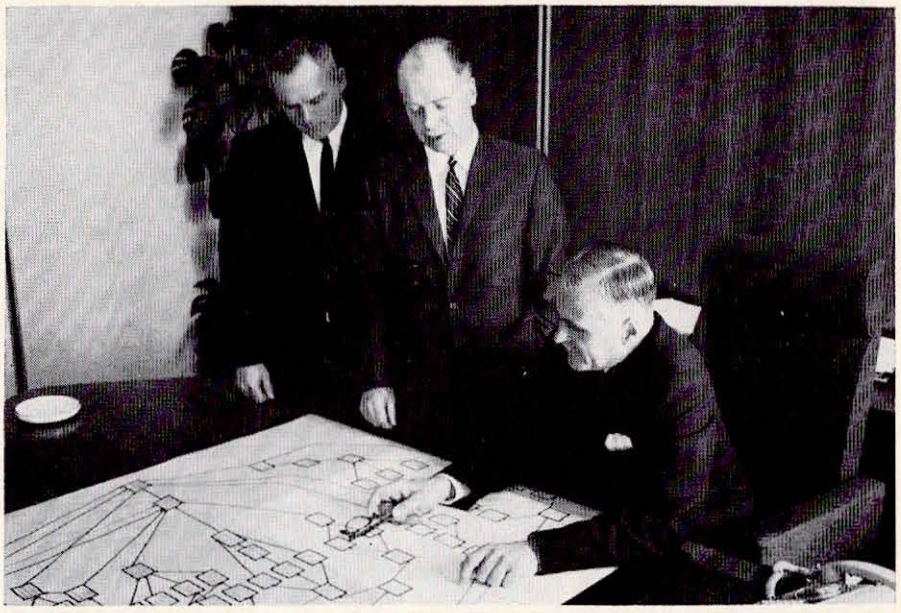
This Second International Symposium on Use of Cybernetics on Railways has been arranged because of the outstanding success of an earlier international meeting on the same subject. That was held in Paris, France, in 1963 under UIC leadership. It attracted world-wide interest—and drew delegates from railways and academic groups in 32 countries of Europe, Asia and North America.

● **Limited attendance.** The coming second meeting will review developments in cybernetics since 1963, and study the over-all application to the railway industry of this relatively new science. To encourage fruitful discussion of the many papers to be presented, attendance will be limited to approximately 200 delegates. These are expected to include railway men on both managerial and technical levels from many countries, plus representatives of universities and consulting agencies active in railroad research.

The general pattern of the second symposium will follow that of the Paris meeting—with one important exception. At Paris, most or all papers were delivered in full at the sessions to which they related. They were not available in published form until delivery, and there was little opportunity for discussion.

At the Montreal meeting, full texts of all papers will be printed ahead of time, and mailed (in English, French or German, as requested) to delegates at the time they register. At the business sessions of the symposium papers will be presented only in summary form—not in full—but time will be allowed for general discussion. This will be facilitated by simultaneous translation into the three languages mentioned, and by availability of Russian interpreters.

● **Program.** The advance program lists approximately 40 speeches or papers from railways, the UIC and other agencies in 13 countries. From North America, the program lists papers or speeches by representatives of the AAR, San Francisco Bay Area Rapid Transit System, Northwestern University and IBM Corporation; and of the following railroads: Canadian National; Canadian Pacific; New York Central; Southern; Great Northern; Southern Pacific; Chesapeake & Ohio; St. Louis-San Francisco; Louisville & Nashville, and Chicago & North Western.



ORGANIZING GROUP for the Second International Symposium on Railway Cybernetics studies the critical path program used in planning the event. The organizers are Maurice Archer, right, CN vice president, research and development; Peter Wilson (on Archer's right), chief of operational research; and Bill Rennie, head of the railway's technical research department.

The opening session, on October 2, will feature a keynote address by the Hon. J. W. Pickersgill, Canadian Minister of Transportation. Other speakers at this first meeting will include Eric Upmark, president of the UIC and of Swedish State Railways; A. E. Perlman, president of the NYC and head of a delegation from the AAR; and one or more representatives of other delegations—including Prof. A. P. Petrov, of the Soviet Railways, and M. G. Archer, vice president (research and development), of the CN.

Following business sessions will cover: (1) General aspects of railway cybernetics in management information and planning and control; (2) automatic control of train movements; (3) management of freight traffic; (4) mathematical and simulation methods in rail transport; and (5) management and automation of operations in marshalling yards. There will also be a panel discussion on ticket sales and reservations of passenger space.

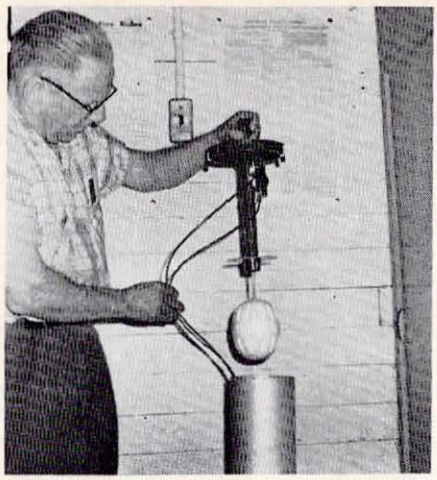
The closing business session will include a summing up of symposium results by Louis Armand, secretary general of the UIC, and an ardent advocate of cybernetics as a useful tool for railway management.

● **Tours are planned.** The complete program provides also for field trips to railroad facilities in the Montreal area, and for a full-day visit to Canada's National Research Council Laboratories in Ottawa. Opportunity will be given to visit Expo '67.

Evening banquets will be tendered to delegates by both Canadian National and Canadian Pacific. N. J. MacMillan, chairman and president of the CN, will address that company's dinner; speaker at the CP banquet will be a high officer of that company. A luncheon given by the AAR will have as speaker ICC Chairman William H. Tucker.

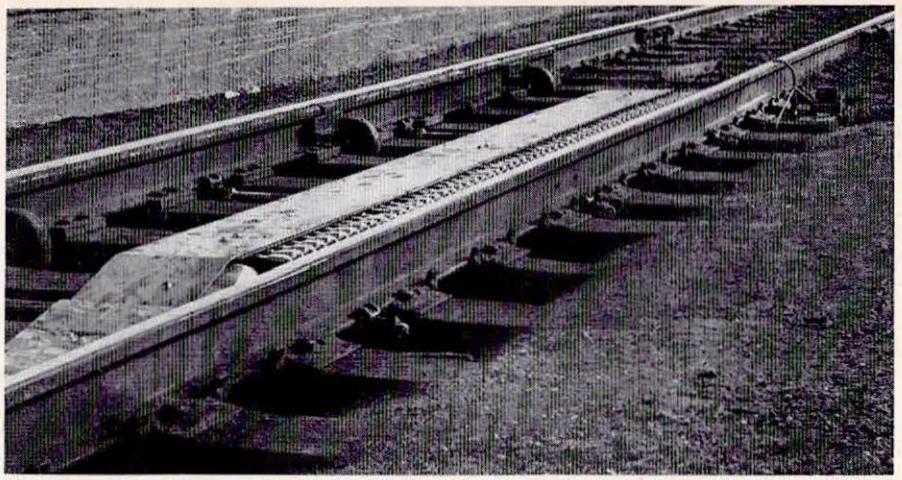
Inquiries concerning the symposium from North America should go to Second International Symposium on Cybernetics, Canadian National Railways, Department of Research and Development, P. O. Box 8100, Montreal. In view of the limitation on numbers noted above, advance registration is required before September 1. Registration fee is $50 (US) for a delegate; $65 for a delegate and his wife.

P. B. Wilson, chief of operational research for the CN, is in general charge of Montreal arrangements for the symposium — and he tells Railway Age that he has made extensive use of the "cybernetics-related critical path method" in his planning. ■



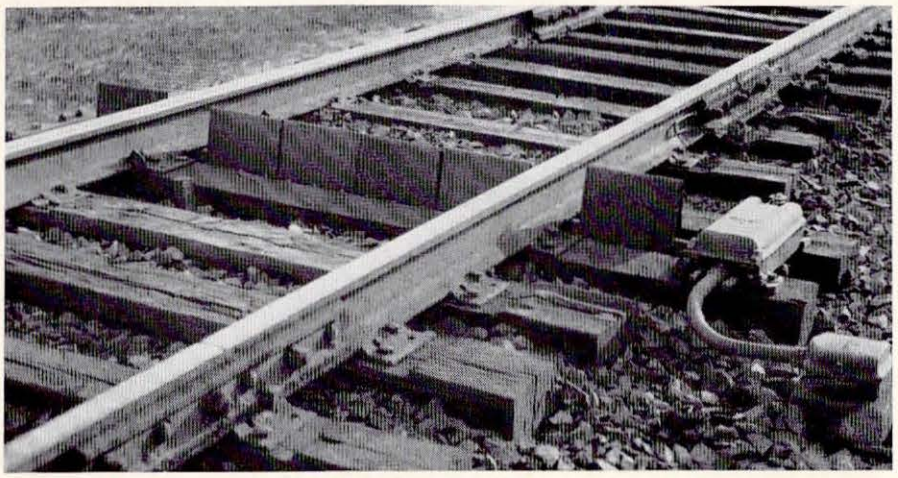
"Flood!"

Dangerous water conditions on track are revealed by flood detector units with cork floats to show water level.



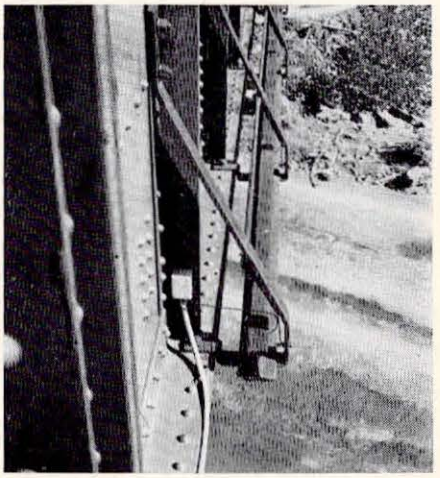
"Loose wheel!"

Broken flanges and loose wheels get flagged down by this detector. A series of steel fingers "feel" passing train wheels and are activated by abnormal equipment. A special unit can be added that will spray paint on a damaged wheel.



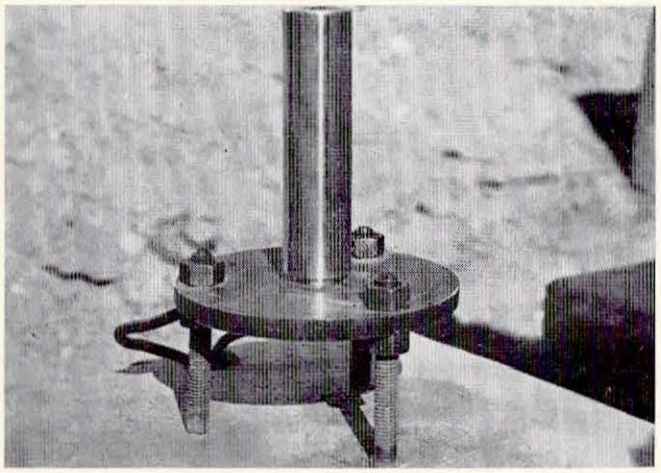
"Dragging equipment!"

A broken brake beam or other equipment dragging over these panels will alert train crews, dispatchers or interlocking operators of dangerous condition on passing train. After train passes, spring pressure returns panel to normal position.



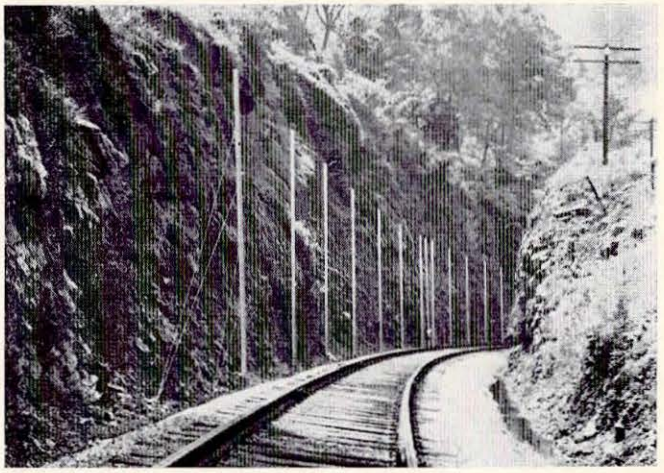
"Bridge moved!"

Railroad bridges that have been knocked out of alignment can be detected by various kinds of trip-wire devices.



"Earthquake!"

When the earth shakes, the pendulum swings, and earthquake information is relayed. One road has a device that will detect 12 different ranges of earthquake intensity.

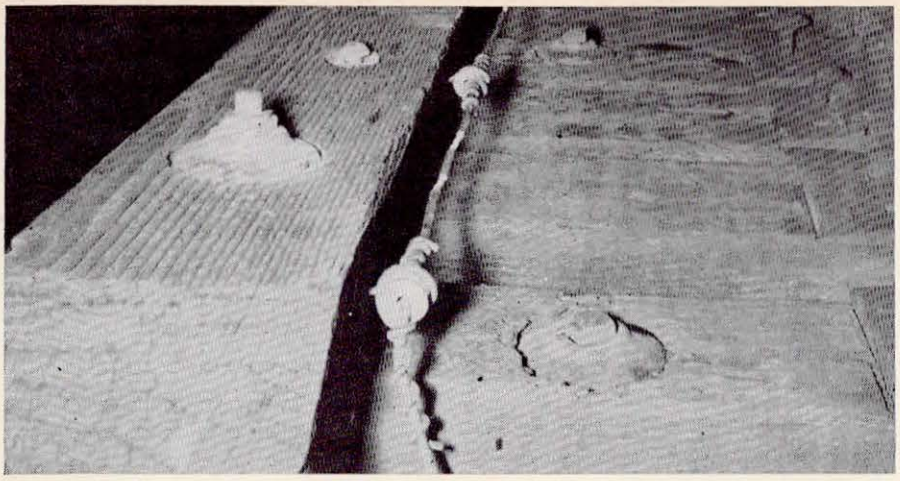


"Falling rocks!"

Slide fencing along the track will emit a signal when struck by rocks or mud slides, setting stop signal and alerting the dispatcher to the existence of a dangerous situation.

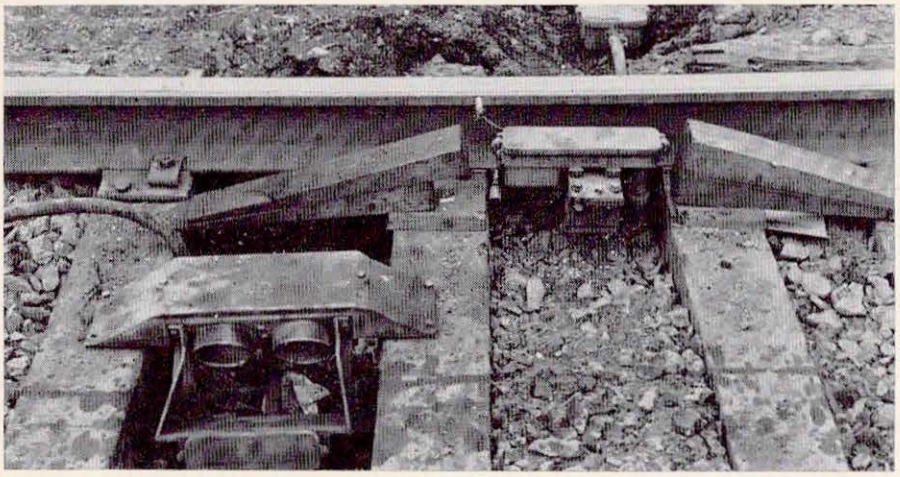
WHAT ARE DETECTORS TELLING YOU?

By helping prevent small troubles from turning into big ones, detectors are proving they could save millions and millions of dollars more each year if used more widely.



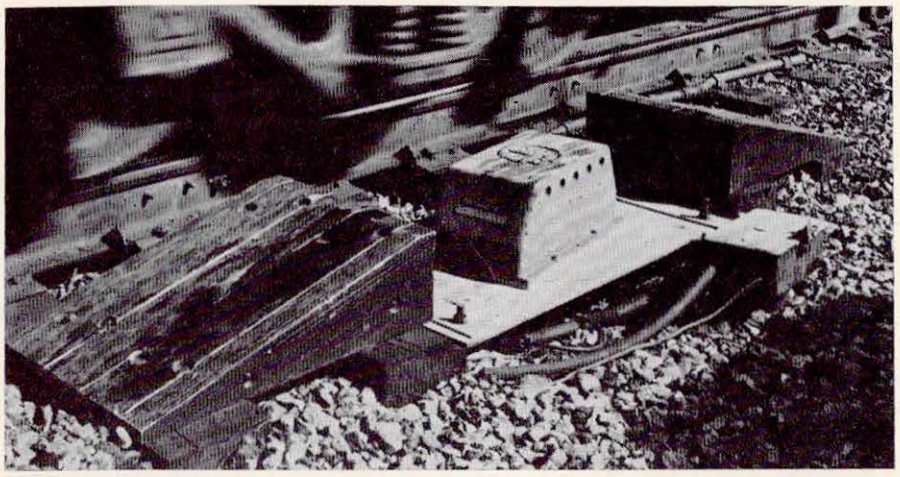
"Fire!"

Heat will melt the solder on this detector, opening a circuit to send an alarm. The devices are used on timber trestles, wood bridge decks, along timber snow sheds and near other inflammable structures.



"It's snowing!"

The presence of snow or a freight car can be sensed by a single detector (left). Sonic beams are directed toward a reflecting plate, and any interruption in waves will activate the device.



"Hotbox!"

Detectors located at the approach to rail yards and along the line scan trains for abnormal conditions. Installation of hotbox detectors is increasing rapidly, over 8,000 having been placed in service by the end of last year.

A fast freight train barreling along at passenger-train speed—an overheated journal—a derailment—a $250,000 pile of junk.

It's just such a series of cryptic entries on accident reports that's stirring railroad men to take a new view of the causes of a growing number of derailments due to hotboxes—and other mechanical malfunctions.

Consider hotboxes alone. Although figures from the AAR's Mechanical Division show that freight cars are averaging two million miles between set-offs—an impressive record—derailments due to overheated journals have nevertheless been increasing over the last three years. ICC figures show derailments due to hotboxes rose to 454 in 1965, up from 346 in 1962.

To get at the hotbox problem, railroads are spending heavily for roller-bearing cars and for hotbox detector installations (such installations have increased from 73 in 1962 to 221 in 1965).

But broken flanges, loose wheels and dragging equipment can also cause a speeding train to careen into a ditch. To meet the problem, railroads are putting a new emphasis on installation of automatic detection equipment to meet a variety of threats to trains along the right of way. Such equipment can spot potentially dangerous conditions ranging from high and wide loads and bridges out of alignment, to falling rock, high water or earth slides.

● **The new need for detectors:** Reasons for employing the detectors are many:

(1) Today, there are fewer people along the right-of-way to watch passing trains for potentially dangerous conditions. Also, there are fewer people patrolling the track to look for

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hazardous situations that might interfere with safe train operation.

(2) The cost of replacing today's freight train and its lading is of significant value. For example, a 100-car, auto-rack train, fully loaded, is estimated to be worth about $6 million. Admittedly, it's rare for an entire train and its lading to be damaged or destroyed in a derailment. But the high value of today's trains makes derailments expensive.

(3) Modern freight trains operate high speeds (some at passenger train speeds of 60 mph or more) making it more difficult for the human observer to detect defects.

(4) Even overheated journals are difficult to detect. Improvements in lubrication for roller bearings, or lubricator pads around plain bearings, make it hard to spot abnormal conditions.

(5) Rising costs of labor, equipment and materials, as well as general inflation, make derailments more expensive.

Interstate Commerce Commission data on derailments, as reported by U.S. railroads, indicate that the average derailment causes only $25,000 damage to track and equipment (freight cars and locomotives). This figure is considered by many to be considerably below the real financial outlay for a derailment. For example, other costs include:

—Labor and materials required by the wreck crew in cleaning up after a derailment.

—Costs to cover repair or replacement of damaged signal and communications facilities.

—Labor and materials for restoring the line to normal service.

—Costs of detouring trains, if necessary, until normal operation is restored.

—Loss and damage to freight, and costs not covered by insurance.

—Intangible costs including loss of future business by shippers who feel a railroad has "too many" derailments.

Thus, a careful examination of the costs incurred by a derailment might well run up to $250,000 or more. This figure is believed by many observers to be the more realistic cost.

Taking a conservative estimate of $200,000 for the total cost of a derailment, the six causes listed in the table above would cost railroads $129 million in 1965. Of this total, by far the largest amount ($90.8 million) is attributed to derailments due to overheated journals.

Reasons for the rise in derailments due to overheated journals are difficult to pin down. The increase in the total car fleet, higher freight train speeds, and competitive pressures to provide service with minimum delays are all factors to be considered. The latter, according to some railroad men, may result in hasty car inspections in yards to meet stepped-up train schedules.

During 1965, when derailments due to over-heated journals totaled 454, the number of cars set off between terminals with hotboxes totaled 24,267. One railroad estimates that it costs $300 when a car is set off for a hotbox and must be repaired. Thus, set offs in 1965 may well have cost the railroads $7,280,100.

The 5,000 automatic detection devices railroads had in service in 1957 will be doubled by 1970. By the end of last year over 8,000 detectors were in service. Part of the increase is accounted for by the introduction of new types of detectors not previously available. Such devices would include presence, snow and clearance detectors (high, wide load detection devices). Also, the hotbox detector made its debut in 1957. Indications are that railroads will install well over 250 detectors of all kinds annually for the next several years.

Although not measurable in equipment units, the well-known rock slide fence is still being installed to protect rights-of-way from falling rocks that might block the track. Railroads are yearly installing well over 15,000 feet of this type of detection device. Usage is based upon the unavailability of manpower to patrol the right-of-way, as well as the need for continuous protection.

● **Automatic inspection stations.** Several railroads have installed multiple detectors at a single location. A generally accepted practice on many roads is to install dragging equipment detectors at hotbox detector sites.

One railroad has added a loose wheel detector to this combination. Others are considering adding a high, wide load or clearance detector where these other devices are located in approach to tunnels or overhead bridges where clearances might be restrictive. In such cases, the approach distance would be such that the train crew could be alerted with sufficient time and distance to bring the train to a stop before reaching the restrictive clearance.

Initial installations of these inspection stations will be at the more seriously restricted areas, that is, in approach to tunnels and overhead bridges with low clearances.

Detector installations increase

TYPE OF DETECTOR / YEAR	1958	1959	1960	1961	1962	1963	1964	1965	1966
HOTBOX	97	121	141	115	73	41	168	133	221
BROKEN & LOOSE WHEEL	—	10	15	15	1	12	28	11	31
DRAGGING EQUIPMENT ..	—	23	17	37	22	67	26	19	123
PRESENCE* ..	—	—	—	—	—	700	331	266	312
OTHERS (SEE TEXT) ...	—	2	79	19	1	3	—	18	5
YEARLY TOTAL	97	156	252	186	97	823	553	447	692
TOTALS**	5,097	5,253	5,505	5,691	5,788	6,611	7,164	7,611	8,303

*(700 in service by 1963, no specific yearly data available prior to this date)
**(5,000 detectors were in service by 1958)

Derailments spotlight the need for detectors

DERAILMENT CAUSE	1958	1959	1960	1961	1962	1963	1964	1965
BROKEN FLANGES[1]	61	46	35	36	55	56	53	54
LOOSE WHEELS[1]	43	67	67	62	75	68	57	77
OVERHEATED JOURNALS[2]	560	659	639	471	346	401	449	454
BRAKE BEAM BROKEN[3] ..	81	67	50	22	29	27	21	18
BRAKE RIGGING DOWN[3] .	22	14	24	21	26	28	12	20
STEAM HEAT CONNECTIONS DRAGGING[3]	15	18	12	13	11	15	19	24
TOTALS	782	871	827	625	542	595	611	647

[1]Detected by broken flange and loose wheel detectors.
[2]Detected by hotbox detectors
[3]Detected by dragging equipment detectors

For the longer view, thinking is that such inspection stations will bracket major yards to provide automatic inspection of arriving and departing trains. In addition to spotting potentially dangerous or overheated journals, the high-wide-load detector might spot shifted loads.

Those are two examples of what such an inspection station could do to alert yard forces about an arriving train. With such an automatic inspection station, yard forces could concentrate on correcting the indicated defects. Outbound trains would pass such an automatic inspection station for a check of their condition at the beginning of the long journey to the next major yard or terminal.

● **Dragging equipment.** This type of defect is most likely to cause derailments at switches where turnout rails may deflect the loose parts under car wheels. Accordingly, dragging-equipment detectors are often placed in approach to interlockings which include numerous switches and crossovers. Also, they are placed in approach to bridges and tunnels where a derailment might cause serious damage and could block the tracks. And, it is almost universal practice to install dragging-equipment detectors on the track approaching the hump in retarder classification yards.

● **Broken flange detectors.** These devices may also detect loose wheels. Because they are most effective when trains move over them traveling 30 mph or less, broken flange and loose wheel detectors are usually installed in yard areas. A growing trend is to install them on hump approach tracks at retarder classification yards. These detectors are usually equipped with a marking unit that will automatically spray paint on the wheel that is defective.

● **Smoke detection.** Several rapid transit authorities have made extensive use of smoke detectors in relay rooms and interlocking towers located underground in subway systems. Here, damage from fire can be extensive. Also, fires may smolder a long time before bursting into flame. Hence, smoke detectors are effective in alerting personnel during the early stages of a fire. In most instances it can be extinguished before great damage is done. In some installations, the smoke detectors are used in conjunction with automatic sprinklers. However, conventional practice is to employ the smoke detector with auxiliary alarm equipment such as a horn or siren, at the location, and an alarm lamp in the dispatcher's office.

● **Snow detection.** Although encrusted snow and ice in switches may not cause serious derailments, they do cause train delays. Snow detectors are usually used in conjunction with switch heaters. Some roads install snow detectors at outlying interlockings and at CTC power switch locations. When the detector is actuated, an alarm light is illuminated on the dispatcher's CTC panel or on the towerman's interlocking control machine. Some roads have interconnected the snow detector circuitry into switch heater controls. Thus, actuation of the snow detector turns on the switch heaters. When snow or ice ceases to be a problem, the snow detector will turn off the switch heaters. However, a timing circuit is usually incorporated in the switch heater controls (which also may have a temperature sensing unit) so that the heaters are not turned off until the ice and snow has melted from the switch area.

● **Detecting car presence.** To prevent switches from being thrown under cars in retarder classification yards, track circuits are usually used. Most automatic yards use circuits 55 ft long for these switch detector sections. However, the addition to the railroad car fleet of piggyback flat cars that are averaging 89 ft long creates a situation in which these cars can span the detector track circuit at a switch. To insure that with automatic switching a car spanning such a circuit is not derailed by operation of the switch, presence detectors have been installed. In some of the newer semi-automatic yards, presence detectors have been installed instead of track circuits to prevent unsafe operation of switches.

Two major types of presence detectors use either the rails for a circuit, or use a loop of wire encompassing the switch area. A car entering these circuits disturbs them electrically, which indicates car presence.

● **Clearance detection.** High, wide load or clearance detectors are placed far enough in approach to restricted clearances so that a train with such a load can be stopped before it reaches the restricted area. Most such detectors consist of a light source and a receiving photocell positioned with respect to the source to provide a line of light at the clearance level. For a high-load detector this would be a horizontal line of light. For a wide load or side clearance detection problem, several light beams are used so that they pass through points of clearance.

The breaking of the light beam by a high or wide load actuates alarm circuitry to provide audible or visible alarms to alert train crews and/or dispatchers.

Once a defect on a moving train or a hazardous condition has been detected, means must be employed to alert the crew of the train, dispatchers, signalmen or track men. Actuation of practically all detectors causes indication lamps to be lighted, alarms to be sounded or automatic block signals to display Stop aspects. Where moving trains are involved, the objective is to alert the engineer so he can bring his train to a stop without applying the brakes in emergency, unless that is required to prevent a derailment.

● **Wayside lights help.** In many instances, wayside indicator lights, such as flashing lunar-white are used to alert train crews. Where wayside detectors are installed in CTC territory, it is not uncommon to have actuation of the detector cause an indicator light to be illuminated on the CTC control machine panel. The dispatcher or CTC machine operator may elect to set a controlled signal in the Stop position for the train that had passed the detector. If two-way radio is available, he will radio the train crew to tell them the reason for stopping the train. Usually, he will radio the crew immediately after being alerted by the detector alarm light. Often in this type of action, the engineer can bring his train to a stop before he reaches the con-

(Continued on page 32)

Who makes detectors

BROKEN OR LOOSE WHEEL DETECTORS: Railroad Accessories Corp.; Wheel Checkers

DRAGGING EQUIPMENT DETECTORS: General Railway Signal Co.; Hanlon & Wilson Co.; Signal & Communications Division of WABCO; Wheel Checkers

HIGH AND WIDE LOAD (CLEARANCE) DETECTORS: General Electric Co.; Hanlon & Wilson Co.; Railroad Accessories Corp.

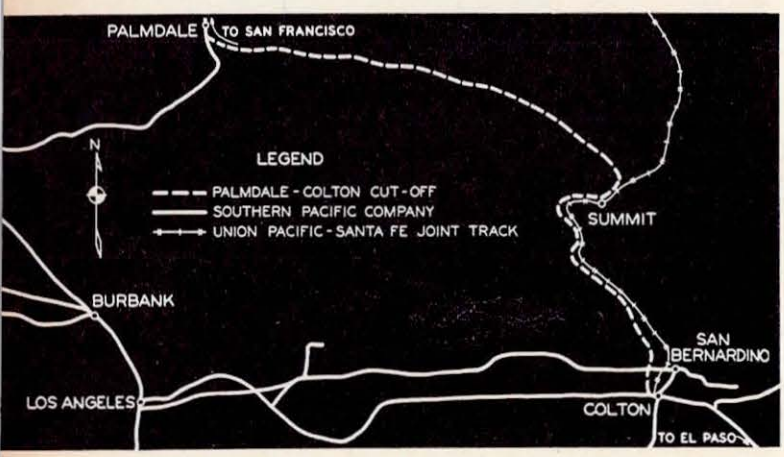
HOTBOX DETECTORS: General Electric Co.; General Railway Signal Co.; Railtron Corp.; Servo Corp. of America

PRESENCE (OR WHEEL) DETECTORS: General Electric Co.; General Railway Signal Co.; Link Division of General Precision Inc.; Radio Corp. of America; Railroad Accessories Corp.; Servo Corp. of America; Western Railroad Supply Co.

SLIDE FENCE DETECTION: General Railway Signal Co.; Signal & Communications Division of WABCO.

SNOW DETECTORS: Railroad Accessories Corp.; Rails Co.; Vapor Corp.

EXCAVATION WORK involved huge quantities of material. In this cut over 237,000 cubic yards of material were removed.



NEW CUT-OFF between Palmdale and Colton is one of the longest line-construction projects to be carried out in the United States in years. South of Summit to Colton it runs through a congested canyon and some urban areas.

GRADING in the mountainous territory involved minimum subgrade widths of 30 feet for embankments and 33 feet in cuts. This extra width provides for access roads for Southern Pacific's track-maintenance forces.

Southern Pacific finishes 78-mile cut-off line at cost of $22 million

The project will speed traffic because it permits the congested Los Angeles area to be bypassed. The track has been built with long strings of welded rail, one being 21 miles long.

A 78-mile cut-off line built by the Southern Pacific between Palmdale and Colton, Calif., at a cost of $22 million went into operation on July 11.

● **Moving mountains.** Anyone viewing this construction work cannot fail to be impressed by the enormity of the project. Huge earthmoving machines literally leveled mountains, scooping up and carrying 30 cubic yards of soil at a time. Where the excavation becomes rock, the teeth of rippers gouged out what they could and the harder rock was torn apart by dynamite. More than six million cubic yards of material had to be moved.

In addition, the ingenuity of the engineer as revealed in modern construction techniques, is plainly evident. Bridges are either of prestressed-concrete or of weathering steel. The track has been built with long strings of welded rail which are field-welded into longer lengths. One of the lengths is 21 miles long. Further, the track was constructed either with the latest design of proprietary machines or with units never before seen on any project and, for the most part, designed and built by the railroad's own forces.

● **Why the line is needed.** SP's existing freight route from the north-south San Joaquin Valley line is south to Los Angeles, thence eastward on its transcontinental line. This route necessarily slows traffic as it passes through very congested areas.

The new cut-off line takes off from Palmdale on the San Joaquin Valley line north of Los Angeles, makes a wide swing to the east to Summit, and then cuts south to a connection with the road's transcontinental route at a point near Colton. From Palmdale to Summit the line is projected mostly through undeveloped areas. But from Summit southward the line passes through Cajon Canyon which, being highly congested, presents formidable construction obstacles.

But the benefits for the railroad are substantial. The cut-off line not only bypasses the congested Los Angeles area but is 46 miles shorter than the existing route. Also, it will permit solid blocks of trains to be made east of Colton and west of Palmdale. Trains can be blocked at Pine Bluff, Ark., Houston, Tex., and El Paso, Fresno, Calif., and Roseville and Eugene, Ore.

Aerial surveys and engineering studies indicated the cost of the project would be $22 million. Nevertheless, it was decided to go ahead with the work. This expenditure has provided a line through the canyon with a maximum curvature of 6 degrees and a grade of 2.2% compensated for curvature, and a line north of Summit with a maximum curvature of 1 degree and a ruling grade of 0.8%. For the first 18 miles in the canyon north of Colton train speeds will be 30 mph, and 45 mph on the remainder to Summit. From there north to Palmdale, train speeds will be 49 mph.

Over 200 private utilities had to be protected during construction, at a cost of $1.5 million. One utility alone (a 36-inch 800-psi high-pressure gas line) crosses the new line at 12 locations and required construction of a new pipe line seven miles long.

The railroad line includes 315 culverts, 18 other drainage structures and 26 grade-separation structures. Paved detour highways had to be built while bridges were being constructed for the more important highways.

● **Most work was contracted.** When the decision was made to build the cut-off line, Harry M. Williamson, SP's chief engineer, requested bids for the entire project, except for the track construction. Because of the large number of bridge structures involved, it was decided to contract the design of all grade-separation structures and the longer bridges across streams. Railroad engineers would design the shorter drainage structures. The design contract for the structures was let to De Leuw, Cather & Co.

The contract for the major portion of construction went to Vinnell Corp., Alhambra, Calif. Vinnell handled all grading work. Other phases, such as pile driving, concrete for bridges, the furnishing of the bridge steel and prestressed-concrete beams, were sub-let. Since the rail, ties and fastenings were shipped from the north, the grading and bridge work were progressed southward from the Palmdale end.

The entire operation, including rail-distribution and ballast trains, trucks, cranes, track equipment and supervision, was coordinated through a radio communication system using the road's own frequencies. The base station was at Colton. Repeater stations were at strategic locations to insure reception. Radios in tool and material trucks assured rapid delivery of materials or parts in case of emergency. Mechanics' trucks also had two-way radio so mechanics could be dispatched quickly to maintain equipment. Two-way radio sets in eight automobiles enabled top engineering help to be kept informed of what was going on over the entire project.

HOW THE JOB WAS DONE—p.26 ►

Big "Pasco"

Under the Northern Pacific's Big Pasco Plan, freight is sped from east of the Rockies to Pasco, Washington, then rerouted to nearly 500 communities by the fastest means possible. Delivery schedules are demanding in this total distribution system, calling for fast, dependable motive power. And the Northern Pacific depends on new General Motors 3600-horsepower SD-45 locomotives to meet the demand.

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Electro-Motive Division
La Grange, Illinois

BUILDING SP's $22-MILLION CUT-OFF

This huge job required new methods and new equipment

The need for speed and economy required looking at each aspect of the project as though all problems were new to railroading.

SELF-PROPELLED MACHINE, called Tiematic, handled ties, plates and spikes automatically. Tiematic moves ahead of rail laying at ¼ mph.

In constructing its 78-mile Palmdale-Colton cut-off in California, the Southern Pacific decided to perform the track work with its own men and machines. For this work, H. M. Williamson, SP's chief engineer—system, and Godfrey J. Lyon, assistant to the chief engineer, divorced their thinking from the conventional methods of track construction and looked at each aspect of the work as if it had never been done before.

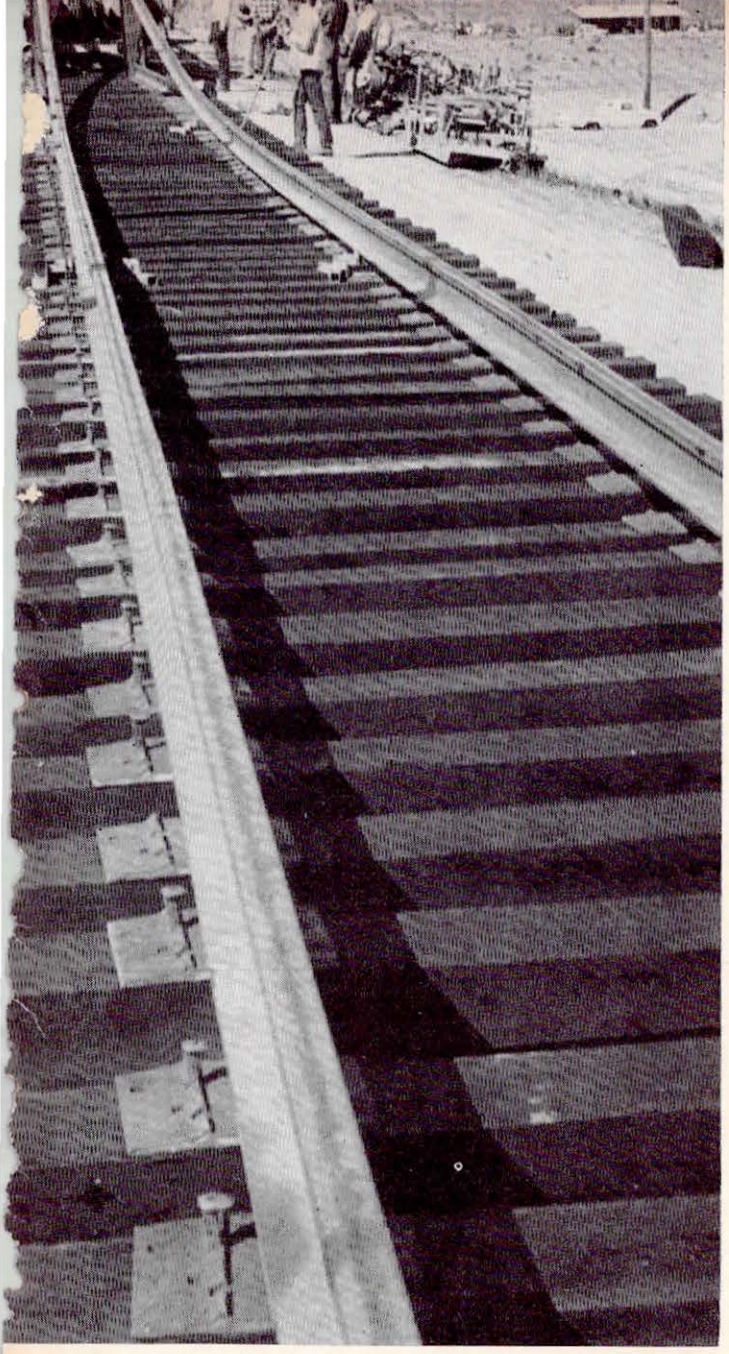
• **Speed and economy.** Approaching the job this way, they felt the work would be expedited and done more economically. And, a project of this size provided the opportunity to try out new ways and equipment to perform all types of engineering and construction.

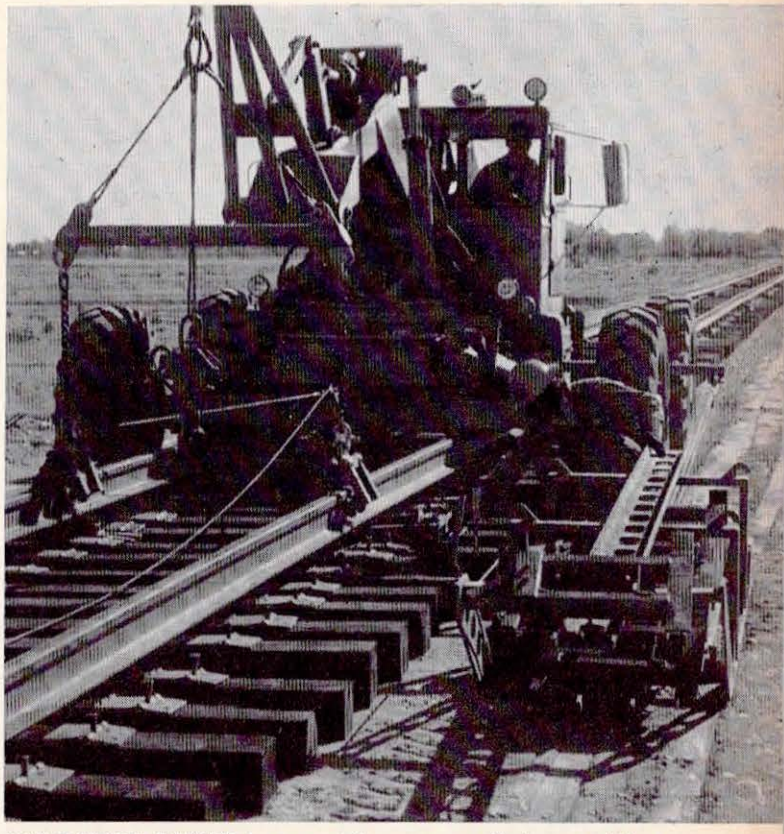
One of the new ideas was not to put the final finish on the top of subgrade when heavy earthmoving machines were doing the rough grading. Instead, this task would be done just ahead of the distribution of track material so the final grade would not be torn up and rutted prior to track laying.

Lyon points out that material distribution is a major task on any construction project. Not including rail and ballast, it takes about 3,250 ties, 6,500 tie plates, 13,000 spikes, and about 4,500 anchors to lay a mile of track. All this material must be distributed in advance of the working parties. It must be kept flowing on a regular basis to prevent delays and to keep the work moving ahead at the rate of a mile a day.

• **New methods.** The procedures followed in distributing material involved some innovations that provided the right amount of material with minimum handling. Crossties were bound 30 to a bundle with heavy strapping at the tie-treating plant. They were unloaded from cars to trailers and unloaded at 50-foot intervals (using engineer's stationing stakes) on the edge of the subgrade. For this work a crane was used with specially constructed cables, and specially designed hooks with hydraulic grapples. Distributing the bundles at the specified intervals made it simple to distribute the other track material, including tie plates in bins, and rail anchors and track spikes in sacks.

Each specially constructed steel plate bin contained approximately 360 tie plates—enough for six bundles of ties. The spikes numbered 120 to a sack. They were shipped in open gondola cars





RAILS WERE RAISED by a mobile crane so that men riding towed sleds could pick up rail-guide rollers. Inclined ramps on sleds made guide rollers flow toward the other end.

WELDED RAILS were pulled off rail train by the mobile crane which has wheels that straddled the ties. The rails were laid first at two-inch-tight gauge.

so that cranes with magnets could load them directly onto trailers. This is said to be the first time spikes have ever been delivered sacked in gondolas. One bin of plates and six sacks of spikes were unloaded at every sixth bundle of ties. It is pointed out that, while rail anchors have been shipped in sacks before, they were loaded in box cars instead of gondolas.

● **Automatic tie layer.** Lyon says the most time-consuming and costly operation of track laying is placing individual ties in line, correctly spaced, and securely fastening the tie plates to the ties at exact gauge before rail laying and spiking. To simplify this operation, an outside manufacturer collaborated with railroad forces to design and construct a self-propelled machine that automatically performs the tasks in one operation.

This machine, called Tiematic, functions ahead of the rail laying. It is controlled through a central relay box utilizing a series of micro-switches, hydraulic pumps, chain conveyors, pushers and magnets, all working on a complete cycle while the machine moves forward at one-quarter mile an hour.

The Tiematic is manned by an operator and two men. A mobile crane works with it and lifts bundles of ties to its forward deck and bins of plates to the upper deck. An elevator on the side of the machine is used to lift sacks of spikes to its upper deck.

The automatic handling of ties, plates and spikes is arranged so that they come togther at one point where hydraulic spike drivers drive one spike in the outside rail-spike holes of each of the two plates at the correct gauge. The spike is driven only about 3½ inches, so its head remains 2 inches high. The one spike holds the plate to the tie, after which the plated tie is deposited automatically on the subgrade at correct line and tie spacing.

● **More new ideas.** For the rail-laying operation, SP engineers came up with additional original ideas. These included practices that precluded bolthole drilling in the rails. They include using specially designed rail-guide rollers transported on sled carriers, laying rails initially at a 2-inch-tight gauge, and temporarily connecting the welded strings with short pieces of rail, called "Dutchmen," to permit passage of the rail train and a newly designed rail-gauger cart.

The rail that was laid is new 119-lb section for the main track, 113-lb section for the sidings. These were welded into strings 1,517 feet long at the road's

welding plant in Tracy, Calif. The rails were not drilled even on the end rails, as the strings were to be field-welded into continuous lengths. Forty strings were loaded on the welded rail train and transported to Palmdale. At that point, a rail-pusher car and two flat cars with elevating guide rollers were added to the train before it was pushed by a work engine to the job site.

A specially converted mobile crane was used at the job site. It has longer axles than the commercial unit so its rubber-tired wheels could straddle the distributed plated ties. It tows a newly designed sled along each embankment shoulder. From these sleds two men distribute rail-guide rollers. These, placed at about 40-foot intervals between two ties, supported the rail strings as they were pulled off the rail train. The guide rollers themselves are new and permitted rapid placement and easy removal later. The crane returns to the train and, by means of special clamping devices, pulls a pair of welded rails off the train and onto the guide rollers.

Another innovation was the method of connecting the undrilled rails to make a joint for passage of the rail train. Using walkie-talkie radios the foreman told the operator of the crane when to slow down as the strings left the train and when to stop. The string was pulled far enough away to permit insertion of a 9-inch Dutchman between the new rails and those already in the track, then was pushed back to effect a tight joint. The Dutchman is drilled so that 36-inch-long bars could be applied to hold the rail ends in line. Before applying the bars, strips of canvas were looped over the undrilled ends of the rails. The strips served to provide a grip by the joint bars to restrain longitudinal and lateral movement.

Two other new features were a rolling type of rail lifter and the gauger cart. To remove the rail-guide rollers, the weight of the rails must be taken off them. So the railroad devised two double sets of steel rollers that engage the rails underneath the heads and on the sides. These are fitted over the rails and are lifted by the boom of the crane, which then moves from the rail train toward the free ends of the rail strings. Men, riding the towed sleds, picked up the guide rollers and placed them on the sled racks.

The gauger cart was towed by the crane as it moved to raise the rails. The cart pushed the rails outward so they dropped onto the rail seats of the tie plates. As the mobile crane moved away, the two spiking machines drove the gauge spikes on every sixth tie. This permitted the rail train to advance.

When the crane reached the ends of the strings and the guide rollers were all picked up and loaded on the sleds, the gauger cart was disconnected and left on the rails, and the same operations were repeated.

After the rail train moved ahead, the remainder of the spiking was carried out by four dual pneumatic spikers powered by two 250-cubic-foot self-propelled pneumatic compressors.

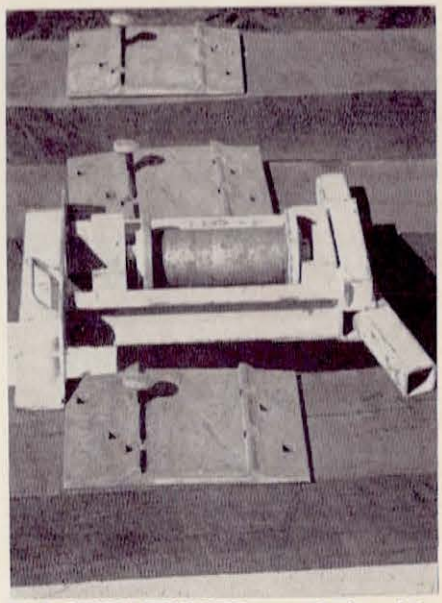
● **New ballast plants.** Because the variance in temperature during the day was so great that sun-kinks could be expected if the track were not held down, ballast was unloaded closely behind the final spiking. Forty 100-ton bottom-dump ballast cars were used in this service. Instead of making a long haul from the Los Angeles area, with at least triple the number of ballast cars required, arrangements were made to obtain ballast locally. Two modern rock-crushing and screening plants were constructed by commercial rock plants. One was off-line at Littlerock, 8 miles east of Palmdale, and the other was at Big Rock Wash, 16 miles east of Palmdale.

At first, the ballast was hauled by truck and loaded into the cars by conveyors and end loaders. But when the permanent ballast site 16 miles from Palmdale was reached, a temporary spur was constructed.

A ballast gang moved in behind the ballast dumping. It utilized a Ballast Regulator, an automatic tamper and a track liner. The tamper automatically lifted the track 4½ inches on the first raise and simultaneously tamped the ties.

A field-welding gang followed the surfacing, using the Boutet welding process. The joint bars and Dutchmen were removed and the rails pulled together with a hydraulic rail-pulling device. The rail ends were preheated and welded together, after which the upset metal was ground off to the contour of the rail.

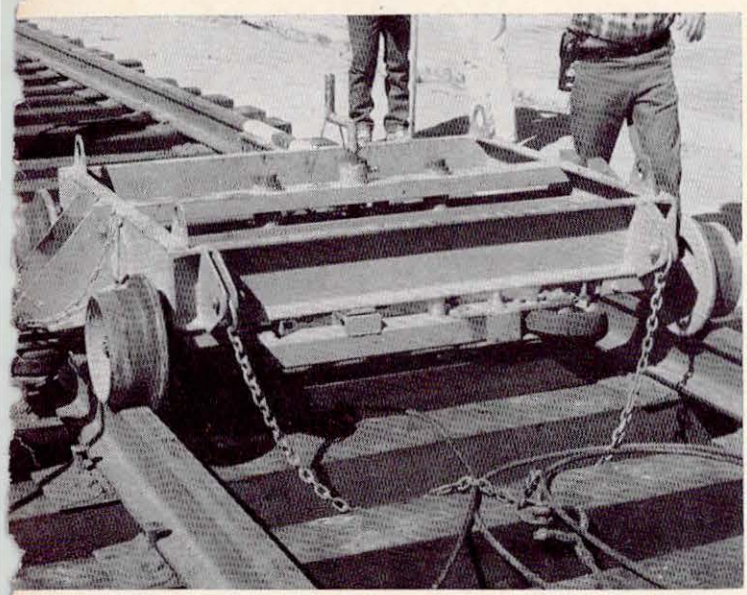
Applying rail anchors was the next step. Two newly developed anchor presetter machines, one working on each rail, set the anchors on the rails and were followed by four units which drove them into place. Because the ballast was dumped ahead of the anchor application, the railroad developed another new machine. This has pneumatic-driven tamping bars in an almost horizontal plane which are activated so that ballast adjacent to the tie and beneath the base of the rail is removed to provide room for the rail-anchor application without interference from the ballast. After this, the surfacing equipment drops back and puts the final finish to the surface and line before moving ahead.



RAIL-GUIDE ROLLERS were designed by SP engineers for quick removal after rails had been unloaded.

● **No breaks for turnouts.** Another feature that is different was the installation of turnouts, The welded rail is laid continuously without any breaks for turnouts. Where turnouts were installed, only three pieces of rail were cut out of the strings. These are for the frog, one switch point and straight stock rail. These three pieces are used on the turnout side. The crossties that are replaced by switch ties were placed on the siding behind the frog.

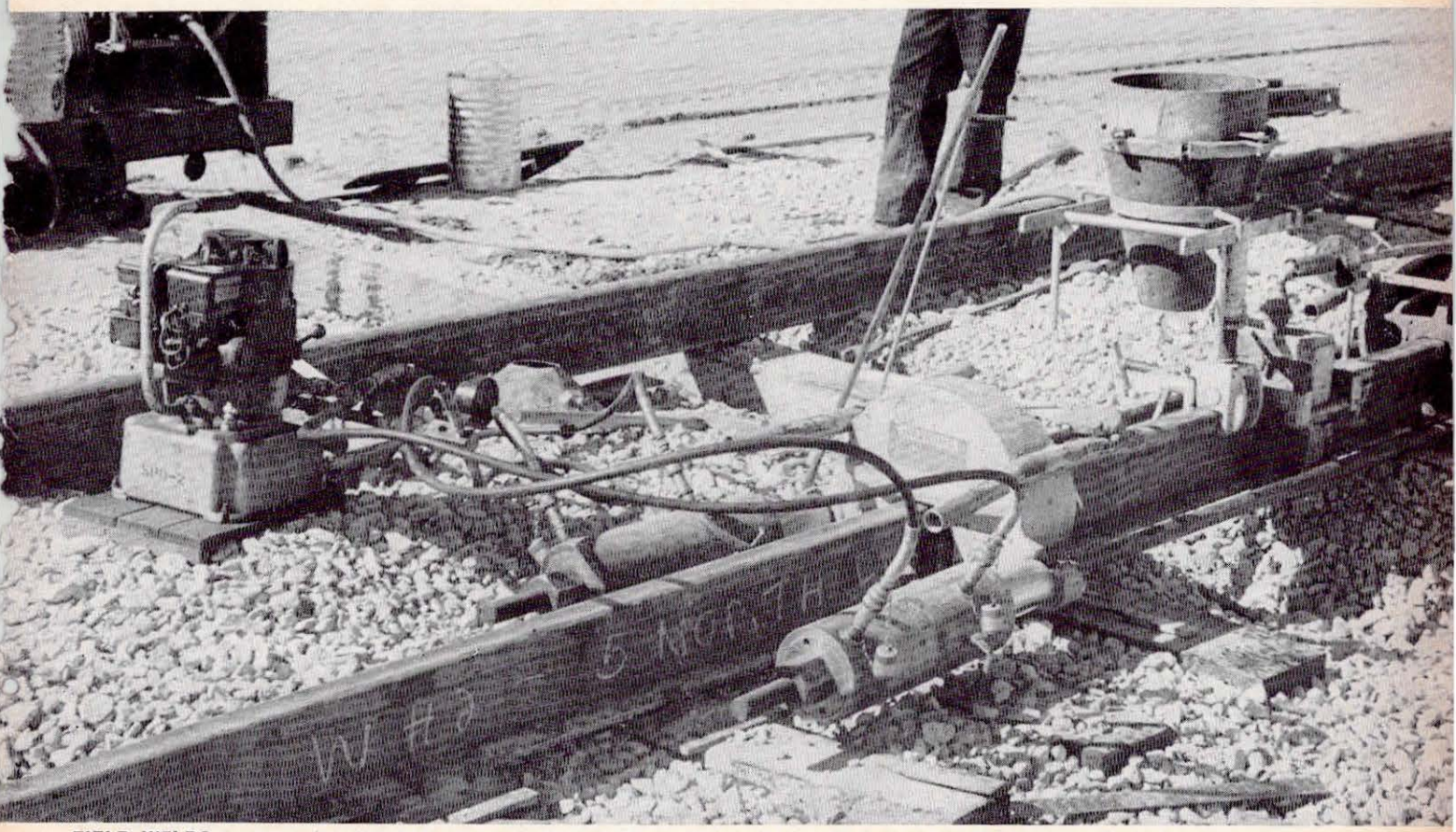
Prefabricated gum planking, along with the ballast, ties and dummy pieces of secondhand rail, were installed at all highway grade crossings in advance of the rail laying. This permitted vehicular traffic to move over the crossings. When the rail-laying operation reached the highway, the dummy rails were pulled out and the welded strings were pulled through the crossing. ■



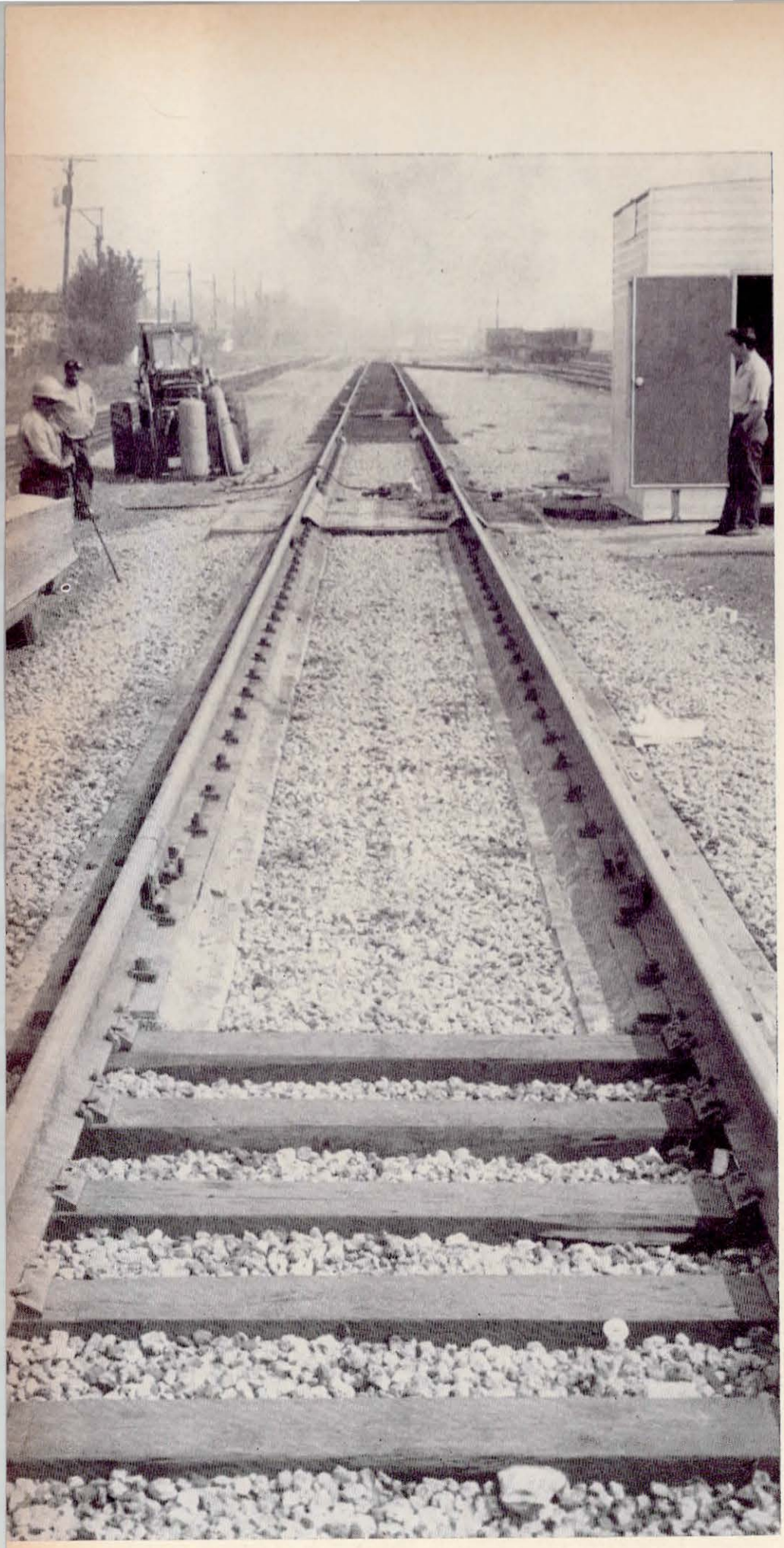
GAUGER CART was towed behind a mobile crane. It has horizontal wheels that engage and move each rail outward to slide rail bases under spike head onto the tie-plate seats.

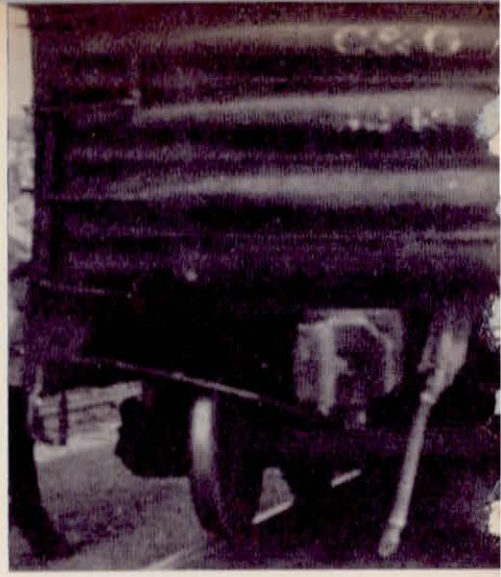
BLANK ENDS of rails were temporarily joined to let rail train pass. Canvas strips, looped over rail ends, make tight fit of joint bars applied with bolts through short piece of rail.

How Southern Pacific installed its welded rail



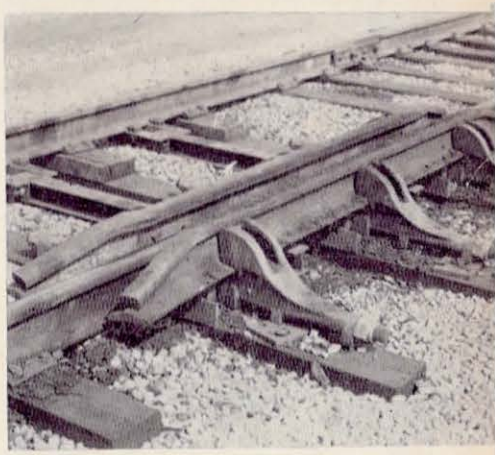
FIELD WELDS were made after ballast was unloaded, to avoid sun kinks. Rails were pulled together by hydraulic rail puller.





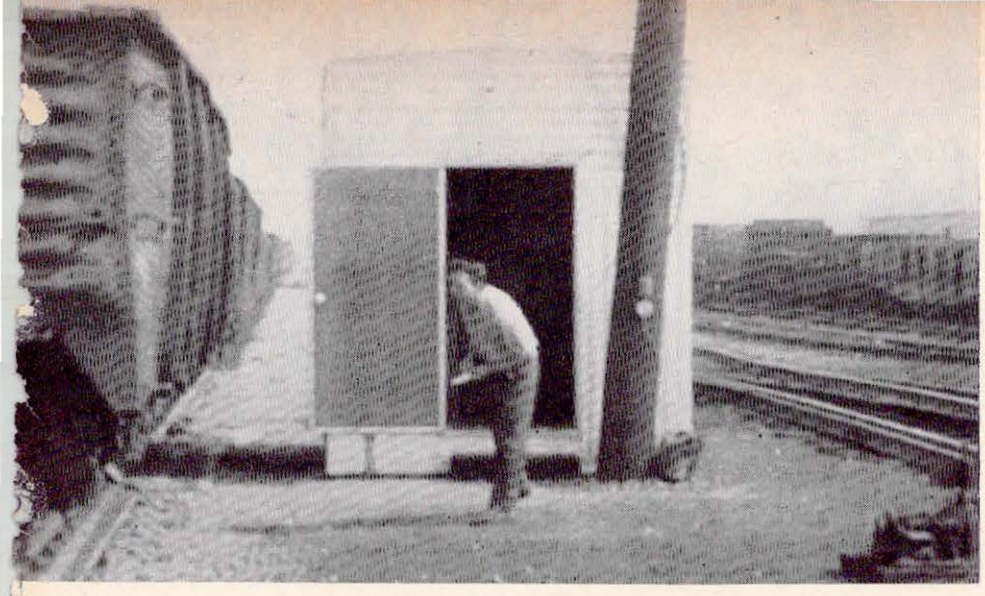
CWP&S cuts

The road's first installation of a



TO ELIMINATE BINDING of car couplings, a retarder of the weight-responsive type is placed on the rail in advance of the Railweight scale. Such binding can interfere with the obtaining of an accurate weight.

SCALE'S WEIGH RAILS are only 5 feet 3 inches long. The 10-foot-long scale foundation is flanked for 50 feet on each side by longitudinal concrete strips which support the approach rails.



RAILWEIGHT SCALE weighs each axle, adds the weights of four or more axles, and prints total weight of each car and its contents. Here, the weighmaster leaves the scalehouse to note the tare weight of one of a string of cars being weighed as it moves.

costs with weigh-in-motion scale

Rent-Weigh scale is designed to speed service to shippers and to release locomotives faster.

The first weigh-in-motion track scale installed by Railweight, Inc., under its new Rent-Weigh plan is in the "F" yard of the Chicago, West Pullman & Southern in the Lake Calumet Harbor district of Chicago. The scale, which weighs coupled cars in motion, has been in service since March 1.

Under the Rent-Weigh plan, the manufacturer installs and leases the equipment to the railroad on a monthly rental basis, plus a few cents for each car weighed to cover maintenance. The railroad designates the track on which the scale is to be installed, as well as the building in which the electronic computer-recorder and print-out mechanism is to be located. The latter can be placed in a building several miles from the scale, if necessary.

● **Saves money.** J. E. Rice, CWP&S president and general manager, is enthusiastic about the performance of the new scale. His road weighs an average of 1,200 cars per month in summer and 1,600 cars in winter. Rice says the new scale saves money on each car weighed and has other advantages, among them being speed of operation.

Formerly, cars were weighed on a 60-foot fulcrum-and-knife-edge scale which, installed in 1960, is still in good condition. However, cars had to be spotted on the scale, then shoved off for the next car to be weighed. This required from three to four minutes for weighing each car.

● **Twelve-second weighing now.** With the new scale, cars are pulled over it and weighed without stopping. The scale track has a turnout at both ends. Cars are weighed in approximately 12 seconds, Rice says. He also estimates that he is saving from 40 to 50 engine-hours per month with the new weighing system, producing time that can be devoted to other essential switching. A big advantage, Rice adds, is that the new weighing system speeds up service to his customers and there is less delay to cars. Also, the old scale required three weighmaster shifts. All weighing is now handled in two shifts.

Among shippers over the CWP&S are the Illinois Slag & Ballast Co., the Wisconsin Steel Works and several scrap yards and industries. Every loaded inbound car for the steel works is weighed to check the origin weights with those at destination. About 50% of the weighing is for tariff purposes. The other weighing is for intraplant purposes, such as for checking plant scale weights for scrap or when billet steel is being transfered to temporary storage.

At CWP&S's "F" yard, the scale is placed on the first track leading off the switching lead. "Weighers" are picked up by a switch engine and pulled over the scale and weighed. A weight-responsive retarder, 10 feet long, is installed on one of the approach rails to eliminate binding of couplings, which could interfere with obtaining accurate weights.

● **Adds axle weights.** The weights of individual axles are accumulated in the computer for four or six axles, as the case may be, and the print-out mechanism prints the total car weights on a tape. Cars are weighed at speeds up to 6 mph. If the speed is above 6 mph and up to 10 mph, a letter "E" is printed ahead of the weight to indicate to the weighmaster that a new run is necessary. Above 10 mph, the printer does not function.

The new scale does not require a large pit, as conventional track scales do. It needs only a concrete foundation. The weigh rails are 5 feet 3 inches long for weighing single axles of cars. The electronic equipment at "F" yard is in a small scalehouse directly opposite the scale. This equipment utilizes solid-state components so that it is compact enough to be placed in small cabinets and still leave room for a desk and combination heater-air conditioning apparatus in the 8-foot by 10-foot scalehouse.

A concrete foundation for the weigh-in-motion scale occupies 10 feet of track space. Longitudinal concrete strips were constructed under each rail for 50 feet on each side. Throughout the length of these strips, the rails are supported on rubber tie plates and are fastened with clips and bolts. The two weigh-rails are of 115-lb section and the railroad laid new 115-lb rail for 200 feet on each side of the scale.

● **Accuracy is high.** Shortly after the weigh-in-motion scale was installed, a scale test car arrived on its regular schedule to test the knife-edge scale. While it was there, the railroad had it test the new scale. The test showed that the scale was accurate within 10 lb for a load of 40,000 lb and within 30 lb for a load of 80,000 lb. The weights of cars on both scales were comparable, the old scale readings being in increments of 50 lb and the new scale in increments of 10 lb. ■

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

INVITATION FOR BIDS

NOTICE IS HEREBY GIVEN that sealed proposals will be received until the hour of 2:00 p.m., Pacific Standard Time, November 8, 1967, at the District's Offices, Reception Desk, 5th Floor, 814 Mission Street, San Francisco, California, for the furnishing of transit vehicles with appurtenances as more fully described in the Specifications. Such proposals will be opened publicly and publicly announced at the said hour and date in the District Display Room, Sixth Floor, 814 Mission Street, San Francisco, California. Bids will thereafter be evaluated as more fully described therein and then accepted or rejected by the Board of Directors.

The time for receipt of bids may be extended by the General Manager of the District for a period not to exceed thirty days. Notice of such extension will be published at least once in a newspaper of general circulation in the District's area, which publication will be at least ten days before bids are formally received and opened.

The procurement includes the design, manufacture, furnishing, delivery, and testing of 250 transit vehicles which will be used for revenue service on the San Francisco Bay Area Rapid Transit System, as more fully described in the Contract Documents.

The procurement is estimated to cost between forty-five million dollars and fifty-six million dollars.

The foregoing range is presented for the bidders' convenience only, and all risks arising from reliance on it are assumed by the bidder. The District shall have no responsibility therefor.

Each bid must be enclosed in a sealed envelope addressed to the Board of Directors of the San Francisco Bay Area Rapid Transit District and endorsed "Proposal for San Francisco Bay Area Rapid Transit District, Transit Vehicles, Contract No. 2Z4601".

Bid documents may be obtained from the Office Manager, Parsons Brinckerhoff-Tudor-Bechtel, General Engineering Consultants to the District, 133 Fourth Street, San Francisco, California 94103, or by mailing request to: "Office Manager, Parsons Brinckerhoff-Tudor-Bechtel, General Engineering Consultants to the District, P.O. Box 3691, San Francisco, California 94119."

Bid documents may be purchased at the following prices, plus four percent sales tax for delivery in California, which price is not refundable:

Contract Book, including General Provisions, Proposal Form, and Contract Drawings and Reference Drawings $10.00

BARTD Standard Specifications, Parts J & K, dated March 1967 ..... 3.00

Each bid must be on the prescribed bid form.

The Board may reject any and all bids.

Dated at San Francisco, California this 11th day of July, 1967.

Richard J. Shephard, Secretary
San Francisco Bay Area
Rapid Transit District

Circle 15 on reader service coupon

What detectors can tell you

(Continued from page 21)

trolled signal that the dispatcher set against the train.

A practice of several railroads with hotbox detectors is to install indicator lamps to alert train crews of the detector actuation. If an overheated journal is detected, a lunar white indicator lamp will start flashing. This lamp is mounted on the mast of the first automatic block signal beyond the hotbox detector scanner.

Some railroads place an indicator lamp (flashing lunar white or blue) at the detector site. Actuation of the detector caused by the passing train will light this indicator. Time-table information tells crews the locations of these detectors and also that the crews are to observe the indicators when passing these locations. If the indicator is lighted, the train is to be stopped.

● **Telephones and radios.** At these detector sites and at all locations where trains stop for inspection because of actuation of a detector, a telephone is available so that the crew can communicate with the dispatcher. They report to him what action they have taken about a detector actuation. On some railroads where radio communication is extensively used (solid train-to-wayside radio coverage is maintained), the crews use radio to contact the dispatcher. In either case, it is essential that the dispatcher be kept informed when a train is stopped because of a detector actuation.

A few railroads, when planning to install detectors, make an economic analysis of the traffic handled in the territory under consideration. Factors to be taken into account include number of trains, type of traffic handled, the value of the traffic (including revenue derived from it), past history of derailments in the territory and the causes, geography of the line under consideration, including availability of set off locations.

It is a case of balancing costs of detection equipment against the probability of derailments and/or set-offs, and how much such an accident would cost the railroad. This economic analysis approach will probably gain favor because of the availability of computer-oriented research procedures for making such studies. Most railroads find that detectors do pay for themselves.

Taking the ICC figure of $25,000 for the cost of a derailment, most detectors will pay for themselves by preventing just one derailment. ■

Lake-to-river canal fight still goes on

So many bombs have been dropped on the proposed Lake Erie-Ohio River canal that the big ditch might not hold water even if it were built—but still the fight goes on.

It goes on, despite bombs such as those tossed recently by the governor of the state at the Ohio River end of the project, Gov. Raymond P. Shafer of Pennsylvania.

Both the governors of Pennsylvania and Ohio were asked for comment. And, while Ohio met a statement-deadline with a request for more information, Pennsylvania's reaction was sharp, firm and to the point.

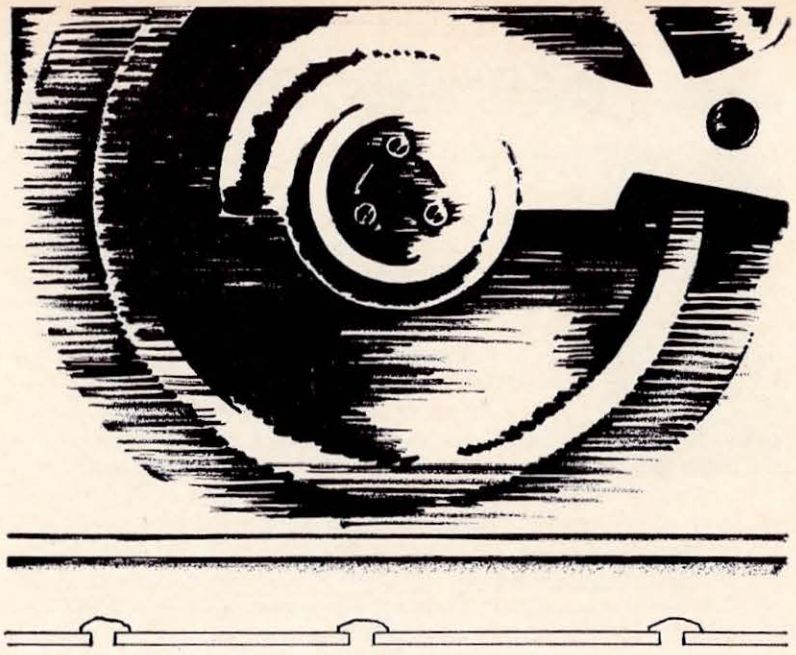
Pennsylvania Gov. Shafer told the U.S. Army Corps of Engineers that the canal "is so wholly devoid of merit that the Commonwealth of Pennsylvania will not provide any of the local cooperation required for the project. . . . So that there is no misunderstanding concerning our views on the project, Pennsylvania will do absolutely nothing required to help build the canal."

• **Calling a halt.** In a letter to Lt. Gen. W. F. Cassidy, chief of the Corps, Gov. Shafer also called for a halt to the whole business of canal planning: "Since the Commonwealth does not and will not support authorization, construction or maintenance or operation of the Lake Erie-Ohio River canal, we feel that all planning on the project should be suspended, and we urge that all funds which were included in the President's 1968 fiscal year civil works budget for advanced engineering and design should not be appropriated."

Down the line, the governor agreed with foes of the long-proposed ditch. Pennsylvania, he said, does not agree that the building of the canal would lead to a revitalization of industry along its route: "At the present time and for the foreseeable future, we have adequate transportation facilities to haul all types of commodities between the Ohio River and Lake Erie."

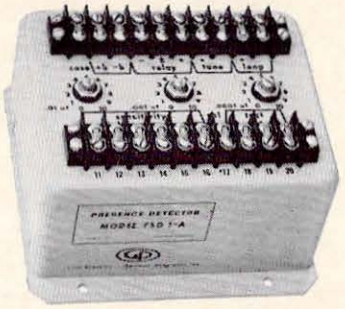
In addition, Pennsylvania's chief executive said that the commonwealth's own figures indicate that original cost estimates have been understated, while benefits of the system "have been overestimated."

Pennsylvania's so-called "local" costs on the canal project include investment



DID
THE SWITCH STAY LOCKED?

NEVER WORRY ABOUT IT AGAIN.



The Link Presence Detector doesn't just tell you where the trucks are, but actually detects the body of the car itself over the immediate area of the switch.

This means you can handle long cars, short cars, high cars with safety. The switch will stay locked till all of the car clears it. The Detector helps automate switching operations and cuts the time needed to make up trains.

In use, the Presence Detector "sees" the car the instant it enters a wire loop around the switch. It doesn't matter which direction the car is traveling. If the car stops at the switch it continues to "see" it indefinitely. The car has to move out of the loop entirely to be out of range.

It's a fail-safe device... failure of any of its components automatically drops the relay into locked position. It's all-solid-state. Insensitive to weather extremes. Easily installed in a standard box. Runs off the normal 12-volt DC supply. Works in the presence of track circuits in the same area. Simple tuning system and built-in adjustment for peak efficiency. No insulated joints required. Moderately priced. May we send you the details? Write to: Western Railroad Supply, 2742 W. 36th Place, Chicago, Illinois.

GENERAL PRECISION INC.
LINK GROUP

Circle 14 on reader service coupon

WATCHING **WASHINGTON** WITH WALTER TAFT

TAFT

AWAY IN IS DEASON—Willard Deason was an old friend of President Johnson's when the President appointed him to the ICC in 1965. He was Mr. Johnson's roommate in college, the President was best man at Deason's wedding, and the Commissioner was Mr. Johnson's administrative assistant when the President was Texas state director of the National Youth Administration. And Deason maintains kennels for breeding beagles from which White House dogs have come.

So, it is no news that the Commissioner is close to the President. How very close they are, however, was pointed up by Deason's recent speech to the Association of Interstate Commerce Commision Practitioners in San Francisco. That speech, delivered June 22, previewed several parts of the address President Johnson made five days later, on June 27, at the National Convention of the Junior Chamber of Commerce in Baltimore. Political commentators have appraised that Baltimore speech as part of the President's campaign for reelection in 1968.

EARLY WITH THE WORD—Let's Cuss the Government, or What's Right with America was the title of Deason's speech. The speech indicates that the Commissioner must have got an advance copy of at least part of the President's address and White House clearance to use it. Deason said: "Fifty years ago, only 10% of our young people finished high school. Today, that figure is nearly 75%—more than double that of France, West Germany, Italy, or Great Britain. Fifty years ago, about 4% of our young people went to college. Today, that figure is nearly 40%. Only 10% of the young people of Great Britain and France go on to institutions of higher learning."

Five days later, the President said: "Fifty years ago, in our educational system, only 10% of our boys and girls graduated from high school. Today that figure is not 10%. It is 75%. That is more than double that of France or West Germany, Italy or Great Britain. Fifty years ago, only about 4% of our young people went to college. Today, that figure is about 40%. Only 10% of the young people of Great Britain and France go to institutions of higher learning."

MORE OF SAME—Deason said: "During the second week in May, our daily newspapers and TV news programs gave us a full dose of the 'peaceniks' who invaded the Pentagon, stomped on its tulips, and slept in its halls. The sleep-ins numbered 12. A bare dozen. During the same week, over 10,000 Americans walked into military establishment centers and offered their services, and perhaps their lives, for their country. Unfortunately, one student carrying a sign—wearing a beard and protesting about something, or burning a draft card—gets front-page billing. Yet, how much have you read about these 10,000 youngsters who volunteer each week?"

The President's subsequent speech said the same things in virtually the same words, although it did have different phrases here and there. For example: Where Deason said the "peaceniks" had "stomped on" Pentagon's tulips, the President said they "walked over" the tulips. Where the Commissioner said the newspapers and TV commentators "gave us a full dose," the President said they "informed us fully."

REPUBLICAN IDENTIFIED—Among other minor differences in like parts of the two speeches was Deason's identification of the late Herbert Hoover as the former President who said: "Criticism is no doubt good for the soul, but we must beware that it does not upset our confidence in ourselves." When Mr. Johnson recalled that warning, he attributed it only to "a former President."

Meanwhile, Deason did say something about transportation. He had a bill of particulars designed to show "how the transportation industry, in partnership with the federal government, has progressed under regulation —as some cussers would say—in spite of it."

of an estimated $95 million for right-of-way and construction costs. Added onto this would be an annual share of operating and maintenance cost.

● **Point by point.** Just in case there might still be some misinterpretation of Pennsylvania's position, Gov. Shafer spelled it out:

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Lake-to-river canal fight still goes on

So many bombs have been dropped on the proposed Lake Erie-Ohio River canal that the big ditch might not hold water even if it were built—but still the fight goes on.

It goes on, despite bombs such as those tossed recently by the governor of the state at the Ohio River end of the project, Gov. Raymond P. Shafer of Pennsylvania.

Both the governors of Pennsylvania and Ohio were asked for comment. And, while Ohio met a statement-deadline with a request for more information, Pennsylvania's reaction was sharp, firm and to the point.

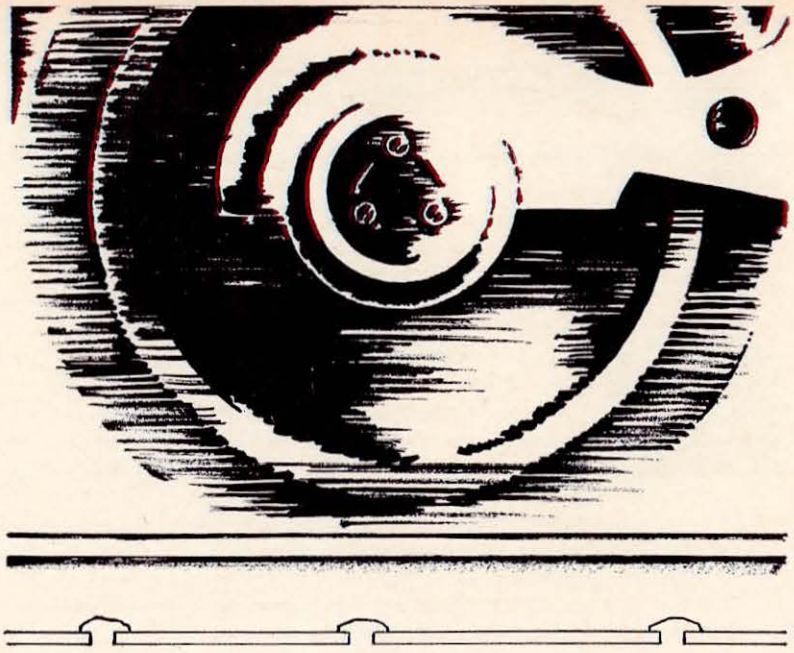
Pennsylvania Gov. Shafer told the U.S. Army Corps of Engineers that the canal "is so wholly devoid of merit that the Commonwealth of Pennsylvania will not provide any of the local cooperation required for the project. . . . So that there is no misunderstanding concerning our views on the project, Pennsylvania will do absolutely nothing required to help build the canal."

• **Calling a halt.** In a letter to Lt. Gen. W. F. Cassidy, chief of the Corps, Gov. Shafer also called for a halt to the whole business of canal planning: "Since the Commonwealth does not and will not support authorization, construction or maintenance or operation of the Lake Erie-Ohio River canal, we feel that all planning on the project should be suspended, and we urge that all funds which were included in the President's 1968 fiscal year civil works budget for advanced engineering and design should not be appropriated."

Down the line, the governor agreed with foes of the long-proposed ditch. Pennsylvania, he said, does not agree that the building of the canal would lead to a revitalization of industry along its route: "At the present time and for the foreseeable future, we have adequate transportation facilities to haul all types of commodities between the Ohio River and Lake Erie."

In addition, Pennsylvania's chief executive said that the commonwealth's own figures indicate that original cost estimates have been understated, while benefits of the system "have been overestimated."

Pennsylvania's so-called "local" costs on the canal project include investment



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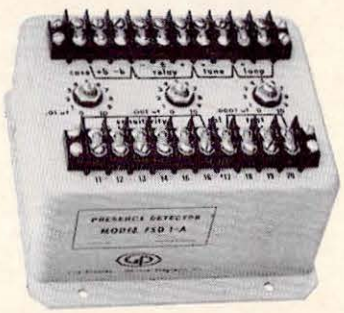

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WATCHING **WASHINGTON** WITH WALTER TAFT

TAFT

AWAY IN IS DEASON—Willard Deason was an old friend of President Johnson's when the President appointed him to the ICC in 1965. He was Mr. Johnson's roommate in college, the President was best man at Deason's wedding, and the Commissioner was Mr. Johnson's administrative assistant when the President was Texas state director of the National Youth Administration. And Deason maintains kennels for breeding beagles from which White House dogs have come.

So, it is no news that the Commissioner is close to the President. How very close they are, however, was pointed up by Deason's recent speech to the Association of Interstate Commerce Commision Practitioners in San Francisco. That speech, delivered June 22, previewed several parts of the address President Johnson made five days later, on June 27, at the National Convention of the Junior Chamber of Commerce in Baltimore. Political commentators have appraised that Baltimore speech as part of the President's campaign for reelection in 1968.

EARLY WITH THE WORD—Let's Cuss the Government, or What's Right with America was the title of Deason's speech. The speech indicates that the Commissioner must have got an advance copy of at least part of the President's address and White House clearance to use it. Deason said: "Fifty years ago, only 10% of our young people finished high school. Today, that figure is nearly 75%—more than double that of France, West Germany, Italy, or Great Britain. Fifty years ago, about 4% of our young people went to college. Today, that figure is nearly 40%. Only 10% of the young people of Great Britain and France go on to institutions of higher learning."

Five days later, the President said: "Fifty years ago, in our educational system, only 10% of our boys and girls graduated from high school. Today that figure is not 10%. It is 75%. That is more than double that of France or West Germany, Italy or Great Britain. Fifty years ago, only about 4% of our young people went to college. Today, that figure is about 40%. Only 10% of the young people of Great Britain and France go to institutions of higher learning."

MORE OF SAME—Deason said: "During the second week in May, our daily newspapers and TV news programs gave us a full dose of the 'peaceniks' who invaded the Pentagon, stomped on its tulips, and slept in its halls. The sleep-ins numbered 12. A bare dozen. During the same week, over 10,000 Americans walked into military establishment centers and offered their services, and perhaps their lives, for their country. Unfortunately, one student carrying a sign—wearing a beard and protesting about something, or burning a draft card—gets front-page billing. Yet, how much have you read about these 10,000 youngsters who volunteer each week?"

The President's subsequent speech said the same things in virtually the same words, although it did have different phrases here and there. For example: Where Deason said the "peaceniks" had "stomped on" Pentagon's tulips, the President said they "walked over" the tulips. Where the Commissioner said the newspapers and TV commentators "gave us a full dose," the President said they "informed us fully."

REPUBLICAN IDENTIFIED—Among other minor differences in like parts of the two speeches was Deason's identification of the late Herbert Hoover as the former President who said: "Criticism is no doubt good for the soul, but we must beware that it does not upset our confidence in ourselves." When Mr. Johnson recalled that warning, he attributed it only to "a former President."

Meanwhile, Deason did say something about transportation. He had a bill of particulars designed to show "how the transportation industry, in partnership with the federal government, has progressed under regulation —as some cussers would say—in spite of it."

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LETTERS FROM READERS

Tomorrow's rail managers

Des Moines, Iowa

To the Editor:

This letter concerns your column "As the Editor Sees It" in the June 12 edition of Railway Age.

It seems to me that you, as well as some other editors, are too concerned about the lack of response of college men to the railroad industry. Many of the trade publications carry articles similar to yours and about the general failure of the railroads' own management training programs.

Frankly speaking, it must be apparent that graduates are looking for pay and other benefits beyond what they are worth. Railroading is not for the individual who is afraid of work, who is looking for an eight-to-five, five-day week. Above all, it is not an industry that can afford to give a still-wet-behind-the-ears grad a job full of "challenge" or responsibility to start with. These are the type of jobs they say they want. Before a railroad can put a man on a job like this he must have months of training on the job with close supervision. There are too many lives and too much property at stake to turn these people loose to manage and supervise others who have spent the necessary time and effort to handle the responsibilities safely and efficiently.

Your Mr. David Perry may have been a train buff and he may also have done a lot of traveling and talking to railroad men—but has he worked on a railroad? Has he spent a summer on a section crew or a bridge and building crew? Has he spent any time in a freight house or a yard office actually helping to run the railroad?

I want to make a constructive suggestion concerning the problem of "Finding Tomorrow's Managers." It would be sheer folly to suggest that railroads could provide the many services they do provide without college men. We need many professional people: engineers, attorneys, accountants, marketing specialists, etc. But let us train our own managers from young people who have come to the railroads fresh from high school or from several months of college and have spent time on the job.

I am not aware of any railroad management training program which has as its objective preparing volunteer or selected personnel from the ranks as prospective officers of the company involved. How much aptitude, talent and willingness to serve is being overlooked? How much better would the new man-

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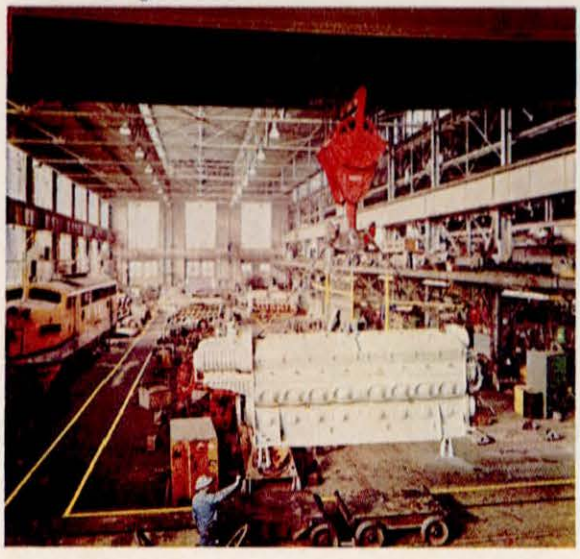

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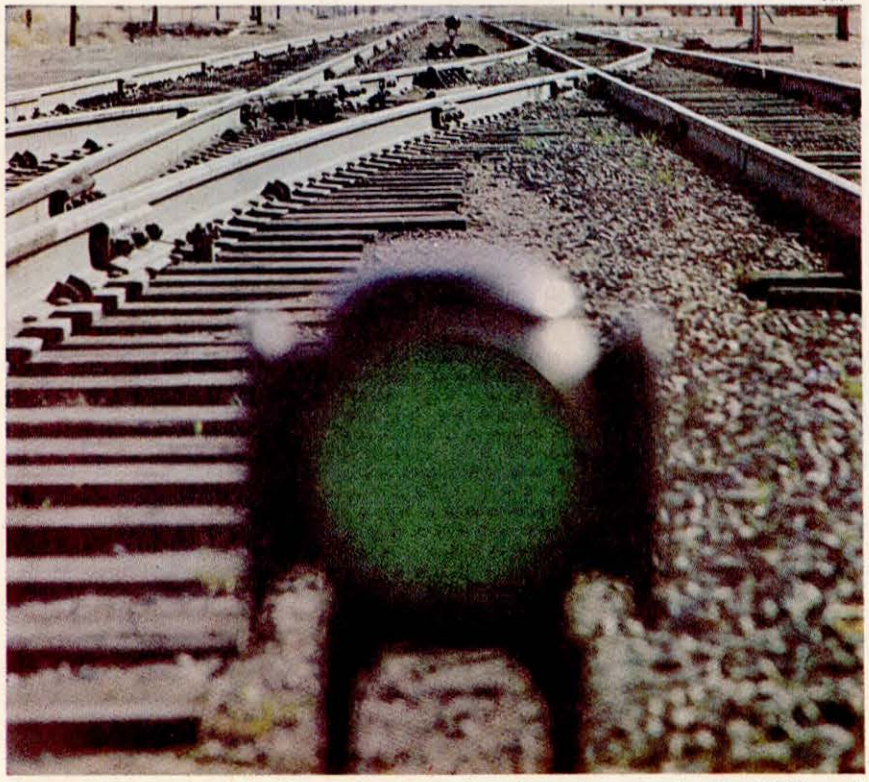

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agers be having had the experience of working nights, weekends and holidays, learning their jobs expertly. Staying on the job with conditions like this takes an extremely high degree of motivation.

So let's stop bemoaning the fact that railroads are having a tough time holding college grads. Let's train our own managers (and meanwhile motivate all the employees to do better) and then "Our Managers" can go into the market and hire the specialists to do the necessary detail work.

I hope you'll accept my observations in the manner which I intended them. I haven't intended to be critical without offering an alternative to correct a bad situation. Companies could subsidize men and women with management potential, encouraging them to enroll in colleges for night courses or extension courses offered by various institutions. These people could be rotated through duties in the various departments until a judgment could be made as to the best field for the trainee.

Well, I sincerely hope I wasn't too hard on your Mr. Perry . . . I appreciate the good job your magazine is doing to keep us informed and I look forward to its arrival every week.

Harvey E. Sims

Railroads and the mail

Washington, D. C.

To the Editor:

The editorial in the June 26 issue of Railway Age entitled "And while we're on the subject" may give the impression to some readers that the railroads are not interested in serving the Post Office, which is far from the case.

Every mail-handling railroad has one person whose sole responsibility is to look after the mail. He is the mail traffic manager or equivalent. In addition, traffic vice presidents of 16 of the largest mail-carrying railroads in the country make up the General Committee of the Association of American Railroads' Railway Mail Transportation Division. The mail traffic managers of all mail-carrying railroads make up the Operating Committee of this Division. In addition there is a task force consisting of operating and traffic vice presidents which meets periodically with Post Office Department officials on problems of mutual interest. Even the AAR Board has a special committee to deal with mail matters.

True, total railway mail revenues have declined in recent years, but it does not follow that railroads no longer want or intend to continue to be the backbone of mail transportation. Most of the revenue decline is the result of decline in RPOs and terminal and piece handling. Actually, linehaul bulk mail has increased relatively and now accounts for 59% of mail revenue, compared with 54% ten years ago.

Furthermore, a mere decline in revenue does not necessarily mean a smaller volume of mail. On the contrary, as improvements are made in the handling of bulk mail, with lower costs and lower charges to the Post Office Department, the revenue dollar is no longer an adequate measure as to either volume or profitability.

I am not aware of any request from Postmaster General Lawrence O'Brien to mount a massive study. This may in part account for your not having received an "authoritative reply." Actually, no such request is necessary as the railroads are constantly offering to handle mail in many fashions; in containers, piggyback, Flexi-Van, in freight cars in freight service, as well as in solid mail and express trains in passenger service, in conventional passenger trains; and if highway transportation is called for, railroads also provide this service.

Herbert B. Brand
Director
Railway Mail Transportation Division
Association of American Railroads

(Railway Age had reference to the following statement which Postmaster General O'Brien gave to The New York Times and which was printed as part of a prominently-displayed question-and-answer interview:

"I think the railroads could halt this decline and perhaps increase their activities with us if they took a hard look at the possibilities of mail transportation, bulk mail and the rest. But under the current situation the railroad decline will probably continue. We currently spend about $630 million on transportation alone, about 10% of our budget (of which approximately $300 million went to railroads last year). We are the largest users of transportation in the world. But the railroad portion of our transportation dollar used to be in the high 60%. Our projection into 1968 is about 43%. I think the railroads will serve themselves well at this point if they had a study—equal in intensity to the study we've recommended of the Post Office Department—of their transportation procedures. I am in no sense anti-railroad. But it is beyond my understanding why the railroads will allow their participation to deteriorate at the rate it has without coming forward with suggestions that might provide us with service we need, and in turn provide the railroads with additional revenue."—Editor.)

Over the years, the CF&I rail brand has come to be known as the mark of a company that provides steel products to clear the way for railroad progress—new sections (136, 119 and 106 lb.), oxygen steel rail, Hi-Si® (high silicon) rail, and accessories. Today, CF&I is working with BARTD* to develop rail and accessories for rapid transit systems, another innovation to stimulate railroad growth.

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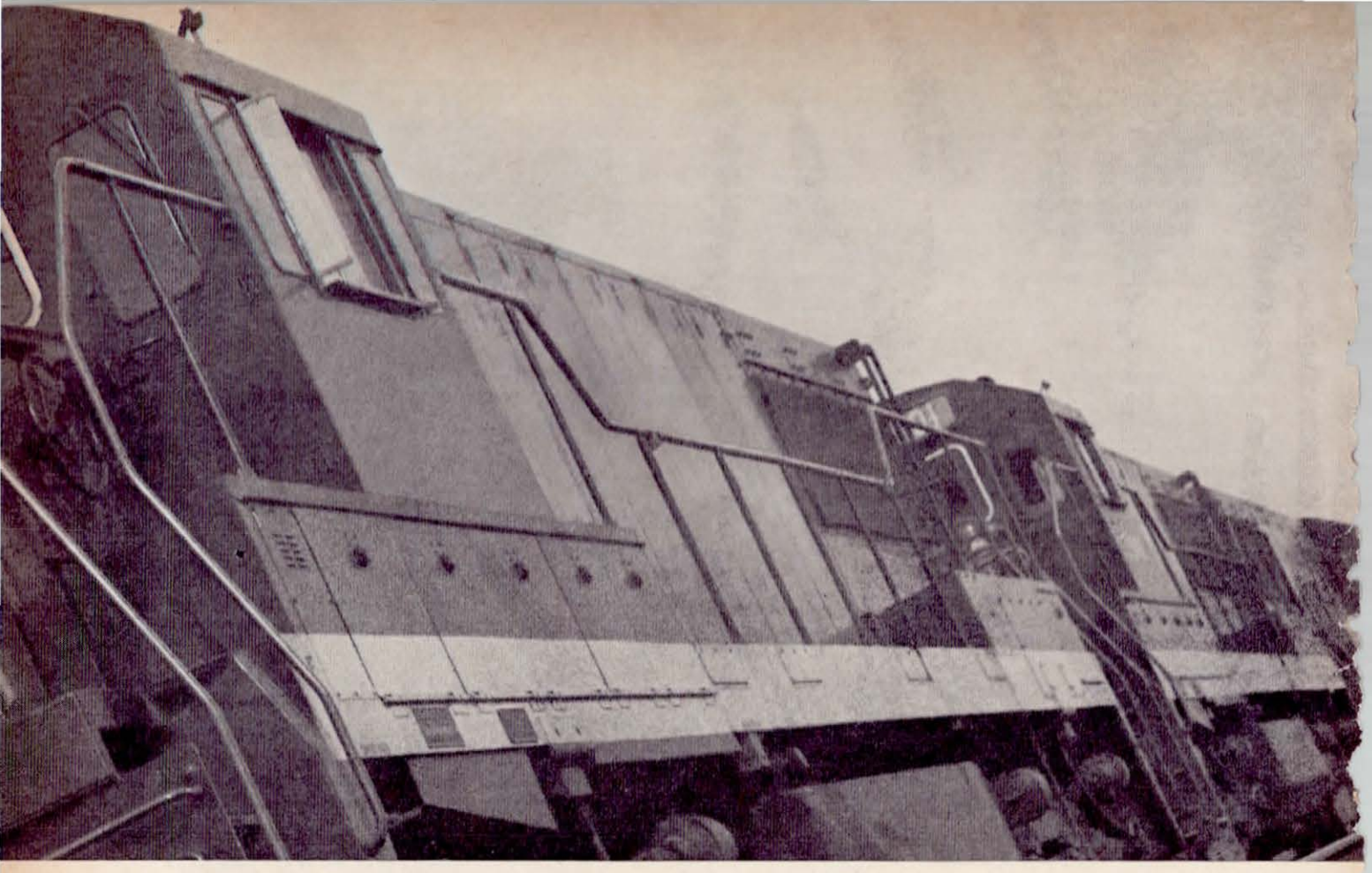

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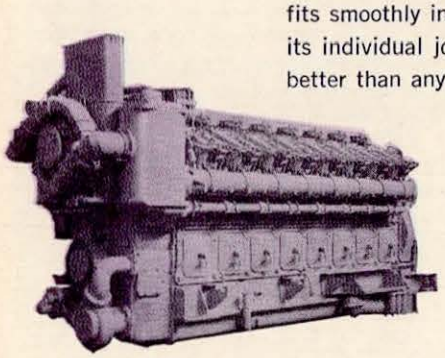

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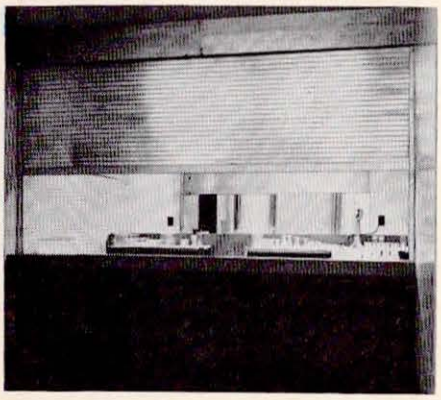
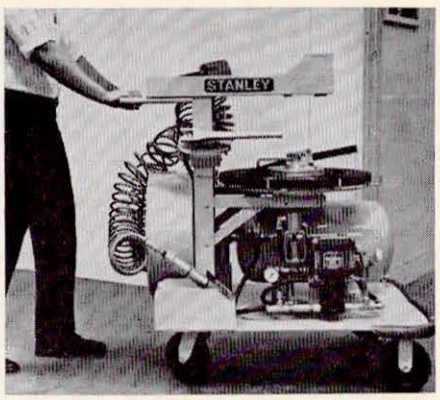
NEW PRODUCTS REPORT



Fire Door (RA-1)

The Fyr-Dor, a slat design rolling fire door for counters and similar applications, is available in stainless steel or zinc-coated steel. It is designed for automatic closure in case of fire but is fully operable for use in any working situation. It is push-up, crank or motor operated and can provide the Underwriters' inspected counter fire door for openings up to 20 ft wide—3 hr Class "A" labeled when within the 120-sq-ft area limit. *Kinnear Manufacturing Co.*



Cargo Strapping System (RA-2)

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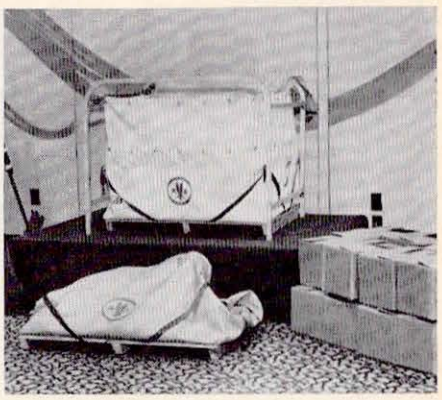

Adjustable Containers (RA-3)

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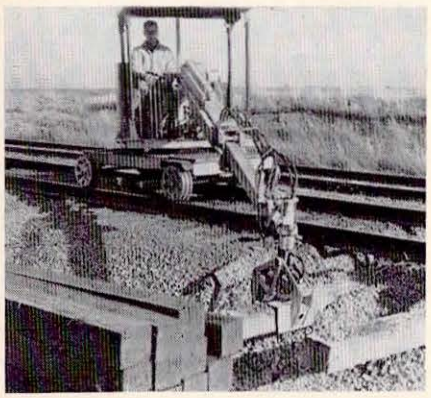

Tie Handler (RA-4)

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Other features of the Tie Handler include: Hydraulically operated fail-safe front and rear brakes, insulated wheels, and an auxiliary hydraulic hand pump to back up engine or hydraulic pump operation. *Nordberg Manufacturing Co.*

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LUTHER MILLER

AS THE EDITOR SEES IT...

LONGEST CREW RUN?—Five days' pay for one (long) day's labor is good work if you can get it—and a Reading freight-train crew *has* got it. What's more, the Reading management thinks it's getting a bargain. The crew we're talking about handles all switching and over-the-road travel for the Reading's newest Bee-Line operation—which involves a five-car cinder train running between Shamokin, Pa. and Port Reading, N.J. The first 408-mile round trip kept this crew on the job 15 hours and 10 minutes; the second shaved the time down to 13 hours and 5 minutes; and the third, to 12 hours, 45 minutes.

Crewmen are selected from the extra board; the five days' pay results from special agreements worked out with the brotherhoods.

Rod Craib, the Reading's director of public relations, thinks this must be the longest continuous crew run in recent railroading history. Any challengers?

HOW HIGH IS HIGH?—Some concern has been expressed that those high-speed trains due to go into service between New York and Washington this fall might become the victims of their own publicity. The consumer press has tended to give the impression that a glamorous new railroad, with Buck Rogers trains travelling at dizzying speeds, is going to spring into being almost overnight. Well, pumpkins just aren't turned into gilded coaches that fast.

Already, there is beginning to be something of a reaction in the press as the facts about this noble (but limited) experiment begin to sink in.

"That 'High-Speed' Rail Test Really Isn't" was the headline that appeared over a story which a New York newspaper recently carried on the Department of Transportation-Pennsylvania experiment.

The headline writer's disappointment came out of a wire-service story that said the new trains would average "only a few miles faster than conventional passenger trains"—77 mph—and that the slow-poke new trains would still take three hours to make the trip.

What the story failed to say was that three hours will beat the fastest present schedules by 35 minutes.

In any case, speed isn't everything. Railroads will never be able to compete with the Washington-New York shuttle planes on this basis.

The service factor is going to be at least equally important, and that depends to a large degree on the attitudes of the people who will operate (and work on) these trains. D.O.T. and the Pennsy are not unaware of this; together, they're spending close to $1 million to retrain employees for this service.

A few days ago we were aboard a 20-car train that left Washington at 10:30 a.m. and pulled into New York's Penn Station at 2:30 p.m. There were some sleeping cars in the consist, from connections. Lunch? A ready-made ham sandwich and a bottle of soda pop (the coffee gave out a few cars ahead of ours) were supplied by a pushcart vendor.

Now, with dining car ratios what they are, we find it hard to blame the railroad for not having a diner in that train. We would find it equally hard to blame any of the passengers on that train if they are less than impressed with the talk about the new high-speed service.

No, sir. Speed alone won't do the trick. Speed and service together may. Telling a passenger that he's going to go hungry for only three hours, rather than four, falls short of our definition of blandishment.

FOR THE RECORD—"Early this year," we reported on p. 54 of last week's issue, "the AAR Board of Directors acted to recommend that railroads should not offer, nor receive in interchange, new or rebuilt cars exceeding 98 feet 4 inches in length." Readers still perplexed over that one are hereby informed that a typo got past our proofreaders. Make that read 89 feet 4 inches.

Why Soo opposes merger plan

There's competition and competition—and Soo Line's case in the Chicago & North Western-Milwaukee road merger hearings is being rather firmly grounded on a base of inter-railroad competition, not inter-modal competition.

Under cross-examination by C&NW and Milwaukee attorneys in Minneapolis, Soo Line President L. H. Murray mentions inter-modal competition—but usually with a construction that lets him put the emphasis on the battle for traffic among railroads, not between railroads and other forms of transportation.

Inter-railroad competition, Soo's president argues, "is essential to sound transportation and to industrial development and growth. . . . The actual course of development and steps which the industry has taken to meet the challenge of our growing distribution efficiency . . . have primarily been the result of competition between railroads for those movements most susceptible to rail handling."

● **'Disciplined' railroads.** Murray also dwells on the matter of the "discipline" of competition: "Shippers located at points having the benefit of effective rail competition exercise their choice so that each competing railroad is strongly motivated to adapt its service to the needs of shippers. Competition is particularly intense in locating industries, since the railroad which directly switches an industry has a great competitive advantage on business handled to and from that industry."

Finally, where supporting testimony in merger cases often dwells on overcapacity in rail facilities, merger-fighter Murray takes an opposite tack. And he doesn't stop with citations of car shortages: "With a continuing growth in our national economy, it is likely that there will be within the relatively near future a shortage of other rail facilities, notably freight-yard switching facilities, locomotives, communications, signaling and main-line track capacity."

Soo Line's case—opposing merger and asking imposition of conditions in the event C&NW-Milwaukee consolidation is approved—was the first presented as the hearing site was moved from Chicago to Minneapolis this month. ■

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the holiday week ended July 8 totaled 405,594 cars, the Association of American Railroads announced on July 13. This was a decrease of 100,548 cars, or 19.9%, compared with the previous week; a decrease of 39,508 cars, or 8.9%, compared with the corresponding week last year; and a decrease of 42,857 cars, or 9.6%, compared with the equivalent 1965 week. Ton-miles generated by carloadings in the week ended July 8 are estimated at 10.5 billion, a decrease of 4.6% below the corresponding week of 1966, and a decrease of 2.5% below the 1965 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, July 8

District	1967	1966	1965
Eastern, including Allegheny and Pocahontas ..	142,166	158,593	164,475
Southern	80,323	82,643	83,654
Total Eastern and Southern Districts	222,489	241,236	248,129
Northwestern .	66,678	77,827	74,901
Central Western	84,396	93,581	92,449
Southwestern .	32,031	32,458	32,992
Total Western Districts	183,105	203,866	200,322
Total All Roads	405,594	445,102	448,451
Commodities:			
Grain and Grain products	40,460	48,058	47,154
Livestock	878	903	1,074
Coal	39,698	44,192	42,470
Coke	6,005	7,943	8,053
Forest Products	26,325	30,102	30,483
Ore	51,429	55,072	53,881
Merchandise l.c.l.	4,236	5,416	7,971
Miscellaneous .	236,563	253,416	257,365
July 8	405,594	445,102	448,451
July 1	506,142	554,203	541,591
June 24	565,429	616,448	609,881
June 17	570,783	625,313	604,145
June 10	577,225	621,155	604,343
Cumulative total, 27 weeks ...	14,400,520	15,063,233	14,854,345
Estimated revenue ton-miles (billions) 27 weeks ...	373.5	378.9	351.0

PIGGYBACK CARLOADINGS.— U.S. piggyback loadings for the week ended July 1 totaled 24,362 cars, carrying 40,412 trailers, compared with 23,960 cars, carrying 39,722 trailers, in the corresponding 1966 week. Loadings for 1967 up to July 1 totaled 586,113 cars, carrying 964,619 trailers, compared with 563,516 cars, carrying 931,154 trailers, in the corresponding period of 1966.

IN CANADA. — Carloadings for the seven-day period ended June 21 totaled 79,835 cars, compared with 79,074 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
June 21, 1967	79,835	24,519
June 21, 1966	86,090	25,616
Cumulative Totals		
June 21, 1967	1,781,074	616,423
June 21, 1966	1,905,903	632,804

FREIGHT TRAIN CARS

► *Great Northern.*—Ordered 300 covered hopper cars from Pullman-Standard for August-September delivery. Cost will be about $4.3 million. Cars are 100-ton type, with 4,740-cu-ft capacity, continuous trough-hatch loading and gravity-center discharge.

► *Soo Line.*—Breakdown of 1968 freight-car acquisition program already announced (RA, June 19, p. 61) is as follows: The Soo will order 200 100-ton box cars equipped with lading-protection devices; 100 high-side mill-type gondolas; 100 open-top hopper cars; 25 60-ft bulkhead flat cars; 15 100-ton covered gondolas; and 10 100-ton depressed-center flat cars. Orders for company-service equipment cover 10 steel cabooses and one 250-ton diesel-powered mobile crane. In addition, Soo expects to place orders later this year for covered hopper equipment for grain service.

SPECIAL

► *Baltimore & Ohio.*—Ordered two 40-ton-capacity "Transtainer" cranes from Paceco for September delivery. The diesel-electric gantry cranes will be used for lifting piggyback trailers on and off flat cars at the C&O-B&O yard at Forest Hills, Chicago. Each of the cranes, with a clear span of 60 feet, will straddle two roadways and two tracks at a time.

NEW FACILITIES

► *Chicago, Burlington & Quincy.*—A microwave system consisting of 16 stations will be built between Galesburg, Ill. and Lincoln, Nebr. at a cost in excess of $1 million to extend a system now under construction from Chicago to Galesburg. When both systems are completed the CB&Q will have microwave communications following their main line from Chicago to Lincoln. Both systems were designed by Collins Radio Co. Space diversity is employed on all paths except one. Equipment for the new system consists of Collins one-watt remodulating microwave, operating in the 6 GHz band and includes an all-solid-state receiver and a transmitter with an ebullator-stabilizer one-watt klystron. Multiplex requirements will be met by Collins' MX single-sideband suppressed-carrier equipment. Operating supervision will be provided by an all solid-state alarm transmission system. Under the terms of the contract Collins will provide a turn-key system installation including antennas, waveguides, batteries, battery chargers, standby power facilities, building and towers. Total system design and installation supervision will be furnished and Collins will train railroad personnel in operation and maintenance.

► *Santa Fe.*—Will build a nine-mile line to serve a $5-million sulphur plant to be built by Duval Corp. near Ft. Stockton, Tex. The new line will branch from Santa Fe between San Angelo and Presidio. Plans call for the branch to be completed in time to handle material required for construction of the Duval plant.

FOREIGN

► *Congo.*—Has requested bids, due July 31, for the supply of seven 500-hp diesel-electric locomotives; 100 60-ton covered-hopper cars; and nine 60-ton refrigerated freight cars. Specifications are available from OTRACO, Dept. des Approvisionnements, B.P. 98, Kinshasa, Democratic Republic of the Congo.

YOU OUGHT TO KNOW

C&NW alters Essex plan: Chicago & North Western's proposed holding company, North Western Industries, Inc., now would acquire outstanding shares of Essex Wire Corp. through issuance of 5% $100 par cumulative convertible prior preferred stock. Under the original plan (RA, June 5, p. 15) Essex stockholders would have received cash and NWI convertible debentures, potential tax liabilities. In addition, the revised plan would permit the holding company to limit acceptance of Essex shares tendered for the new preferred.

WP joins Fruit Growers owners: Western Pacific on July 1 became one of 15 owning-member roads of Fruit Growers Express Co., and the only owner line in western territory. WP's entire supply of refrigerated freight-car and trailer equipment, and protective service, will be furnished by Fruit Growers. Prime advantage of its stock-acquisition membership, WP says, is that Fruit Growers' large fleet can be released from November-May heavy demands in the East and South to serve WP customers in the May-October season of heavy demand in the West.

Evans tests pneumatic bulkheads: Evans Products Co. now is running impact tests on a pneumatic bulkhead system of freight-car load control acquired from General Foods Corp. The system consists of a movable bulkhead spanning the freight car's width and expanding two outer panels to keep pressure on the load. By preventing both lateral and horizontal movement, the bulkhead eliminates the need for side fillers. Production will start in late September at Evans' Plymouth, Mich., plant after test loadings on 10 demonstrator cars available earlier to shippers.

AAR, MTMTS pledge cooperation: AAR President Thomas M. Goodfellow and Maj. Gen. John J. Lane, commander of the Military Traffic Management and Terminal Service (MTMTS), have signed an agreement calling for "efficient utilization of commercial rail transportation (passenger and freight) by all agencies of the Department of Defense." Said General Lane: "The signing of this document represents the formalizing of a splendid relationship that already exists with the AAR." Goodfellow said "the interest of the AAR has always been to assure a continual availability of rolling stock so that the Department of Defense can meet its requirements."

WABCO switches names: What used to be the Union Switch & Signal Division of Westinghouse Air Brake Co. (WABCO) is now the Signal & Communications Division. WABCO President Lawrence E. Walkley announced the change last week. He said the new name more clearly identifies the division with the major markets it serves and emphasizes principal product lines. S&CD is the sixth WABCO division to undergo a name change this year as part of a continuing program to more closely relate WABCO with its markets. Charles D. Howell is vice president and general manager of the division.

Air freight tonnage up: In this year's first five months, scheduled domestic airlines flew 540,481,000 revenue ton miles of air freight, an increase of 11.9% over the year-ago figure.

Car utilization seminar: The Manufacturing Chemists Association will hold an all-day seminar on car utilization at New York's Americana Hotel Nov. 30. Morning talks by shippers, a railroad representative, and a car builder, will be followed by an afternoon panel discussion. J. R. Sullivan, New York Central vice president—marketing, will be the keynote speaker at lunch. Further information is available from A.C. Clark, secretary of the Transportation and Distribution Committee, Manufacturing Chemists Association, 1825 Connecticut Ave., Washington, D.C. 20009.

Truck tonnage: Intercity truck tonnage in the week ended July 1 was 4.5% above that of the previous week but 5.5% below volume in the corresponding 1966 week, according to American Trucking Associations.

Current statistics

Net Income	
3 mos., 1967	$120,000,000
3 mos., 1966	172,000,000
Carloadings, revenue freight	
27 wks., 1967	14,400,520
27 wks., 1966	15,063,233
Freight cars on order	
June 1, 1967	32,493
June 1, 1966	61,229
Freight cars delivered	
4 mos., 1967	32,785
4 mos., 1966	29,300
Serviceable cars	
June 1, 1967	1,419,210
June 1, 1966	1,412,244

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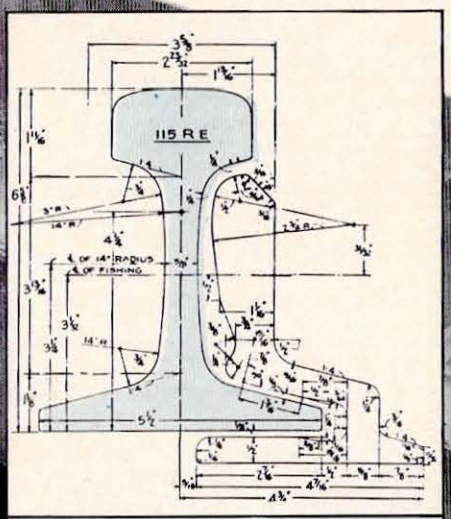

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PEOPLE IN THE NEWS

CHICAGO & NORTH WESTERN.—Larry S. Provo, executive vice president, elected president and a director. The position of president was held by **Ben W. Heineman,** who will continue as chairman and chief executive officer.

R. H. Setchell named superintendent of stations, Chicago, succeeding **E. B. Wilson,** advanced to assistant general manager-administrative services (RA, June 26, p. 79). **P. H. Rasmussen** named supervisor-station services, and **J. C. Walbert,** supervisor-station operations, both at Chicago.

D. M. Hemenway, engineer of tests, appointed research and test engineer. **H. W. Azer,** supervisor water service, named engineer of tests.

READING.—J. Stewart Warden and **Robert H. Newton** appointed, respectively, manager, passenger services, and manager, data processing-operations. Mr. Warden will be responsible for management and administration of all passenger service matters, reporting to **J. Richard Tomlinson,** assistant vice president-finance. His former position—manager planning and analysis, passenger services—which he had held since 1966, has been discontinued. Mr. Newton has been with the Data Processing Department since 1960. He was made supervisor in 1963 and two years later was named programmer, which position he held until his present appointment.

The following appointments have been made in the engineering department: **J. J. Foster,** assistant chief signal, electrical and communications engineer; **L. E. Robinson,** signal and communications engineer; **R. A. Ciccarone,** assistant electrical engineer; **R. C. Zieber,** assistant signal engineer—design; **J. E. Schweigert,** assistant signal engineer—construction and maintenance; **A. F. Mill,** communications engineer.

RICHMOND, FREDERICKSBURG & POTOMAC.—John J. Newbauer, Jr., elected assistant to president, and secretary and treasurer. Mr. Newbauer, at the time of his election, was administrative assistant to president and assistant secretary and assistant treasurer. As secretary and treasurer he succeeds **Harold S. Wood,** who has retired after more than 52 years' service with the RF&P.

Edward A. Wallace and **Andrew J. Lucas, Jr.,** elected, respectively, assistant secretary and assistant treasurer. Mr. Wallace had been assistant to secretary since Dec. 1, 1966. Mr. Lucas had been assistant to treasurer since Dec. 1, 1966.

Richard L. Beadles appointed executive assistant-staff.

Lynn H. Faber, manager purchases and stores, retired July 1. The purchasing and stores functions have been consolidated with the mechanical department operations under jurisdiction of **H. T. Rainey, Jr.,** chief mechanical officer.

Albert C. Kitchen named assistant to treasurer. **Mrs. Phyllis M. Stonnell** appointed cashier.

SUPPLY TRADE

Daniel W. Conrad has been appointed general manager of the **Tank Car division** of **General American Transportation Corp.**

Clifton C. Putnam has been named manager of Florida operations in the GATX Terminals division. Previously manager of GATX's largest terminal at Carteret, N.J., Mr. Putnam will be in charge of the management, sales and marketing activities of the division's three Florida terminals in Tampa, Panama City and St. Marks.

Albert H. Kelso has assumed the position of manager of railroad bearing engineering for the New Departure-Hyatt Bearings Division, **General Motors Corp.** Mr. Kelso succeeds **Albin D. Edelman,** who retired June 1.

Robert E. Kleist and **Joseph M. Ball** have been appointed, respectively, general manager-sales and sales manager in the sales department of **Railway Maintenance Corp. M. R. Hoffman** has been assigned to the new post of assistant to vice president—sales. Mr. Hoffman is succeeded as service manager by **C. L. Kohler.**

Carl T. Crumrine has been appointed vice president marketing of the **Trailmobile Division** of **Pullman, Inc.** He succeeds **R. W. McDowell,** resigned. Mr. Crumrine has resigned as president and director of Berman Leasing Co., effective July 31.

G. G. McManis and **Robert P. McArdle** have been appointed assistant vice presidents, marketing. Mr. McManis will be in charge of marketing services and Mr. McArdle will handle field sales.

Lynn H. Mohr has been appointed general manager of **TransGo, Inc.,** owners and lessors of freight cars. Mr. Mohr will be responsible for dispatching, expediting and tracing TransGo's fleet of jumbo tank cars.

Frank Youngwerth has been appointed senior vice president of **Raiload Accessories Corp.**

Frank B. Arden, Jr., has been promoted to the newly created position of manager of distributor sales, **Great Dane Trailers, Inc.**

R. E. Kleist
RMC

J. M. Ball
RMC

C. T. Crumrine
Trailmobile

L. H. Mohr
TransGo

For the past seven years Mr. Arden has been the firm's east Georgia sales representative.

Kemco, Inc., has been named southwestern sales representative for **Railweight, Inc.** Kemco's territory will include Oklahoma, Texas, Louisiana, Arkansas and New Mexico.

Val Nevis has been named sales manager for the **AMSTED Research Laboratories,** corporate research arm of AMSTED Industries.

Metro Co., Orlando, Fla., has been authorized as a distributor for **Parker Hannifin Corp.** industrial and railroad air brake hose and field replaceable fittings.

Bingham, Inc., Cleveland, has announced expansion of its Transportation Sales Department and the appointment of **Eugene E. Dailey** as vice president in charge of the department.

OBITUARY

Donald J. Smith, 48, assistant vice president of operations, **Missouri Pacific,** died recently at St. Louis.

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VIEWPOINT

Taxes: The good fight goes on—and on

Early next month, if all goes as scheduled, a subcommittee of the Senate Commerce Committee will begin hearings on the railroad industry's latest effort to get a "court of last resort" at the federal level in cases where railroads have been able to get relief from discriminatory taxation at the state level. The House Interstate and Foreign Commerce Committee held hearings on similar legislation last year, but no report was issued, the bill died, and now a fresh start has to be made.

Some might argue that (a) railroads have made good progress in righting wrongs in the states, and (b) as a result, federal attention isn't really necessary. The first point is occasionally valid—but the second would appear to be on extremely shaky ground. It takes only a look at what's been happening in Nebraska.

In Nebraska, railroads are assessed at the state level. All other property, including the property of utility companies, is assessed locally. For some years, there's been a statutory requirement that assessments be equalized at 35% of market value. Railroads had to go to court to get *their* assessments put on a uniform basis but, after they won the case, everything was relatively rosy—for a while. Then it developed that with market values increasing and local assessments remaining static, the ratios were declining: Railroad property stayed at 35%, but the ratios on locally-assessed property slipped to 27% or 28%.

The state tax commissioner, noting the slippage, tried to make correction by ordering blanket increases to get assessments back up to the proper ratio. But he ran into trouble from a number of counties and, eventually, the state supreme court ruled against him. That brought the matter home to the one-house Nebraska legislature, and the lawmakers approved a bill under which the tax commissioner would check local ratios before certifying railroad assessments for tax purposes. If he found, for instance, that local assessments were on a 25% basis, he'd debase the railroad assessment to that level.

The governor vetoed the bill. And despite the fat margin by which the measure passed—34 to 5—there's apparently no thought of over-riding the veto.

Railroad taxmen well know that they've got a long way to go to get a helping hand in Washington. But if memory serves, Congress did once act to give relief where none was available at the state level—through the passenger train-off provision of the Transportation Act of 1958. For weary, frustrated, aggravated tax men, there may still be hope.

The dual basis of pay: Is it sacred?

In view of all that happened during the long work-rules controversy, it came as quite a surprise recently to hear the chief executive of the largest operating brotherhood take potshots at the traditional methods of paying operating employees. The so-called dual basis of pay was staunchly defended by the ops against all assaults connected with the rules battle—but here comes Charles Luna, president of the Brotherhood of Railroad Trainmen, with the thought that maybe there really is another way.

Luna's idea has not been clearly defined or clearly enunciated. It came as an off-hand comment—to the effect that rates of pay might be somehow reestablished, that the industry might "gear wages to revenue ton-miles handled."

The idea isn't really new. The BRT itself has a number of contracts in effect on its bus divisions which make use of this "sharecropper" principle. And Luna has a proprietary interest in such things: The first such agreement was negotiated 13 years ago, after a 154-day strike, by an up-and-coming BRT officer named—that's right—Charles Luna. The main difference in approach now would seem to be that rail rates would be tied to ton-miles, whereas the bus agreements establish wage formulas tied to bus-mile revenues. In one bus contract, for example, drivers get a 1/8-cent-per-mile incentive increase for each 1-1/2-cent-per-bus-mile increase in the company's operating revenues, over and above the established base.

What's Luna's seemingly-casual comment mean? As a matter of specifics, nothing. The key element may not be what the BRT president is saying—but rather the fact that he said it.

We've switched our name, but not our job!

Effective July 15, the Union Switch & Signal Division of WABCO officially switched its name. We are now: Signal & Communications Division of Westinghouse Air Brake Co. (WABCO). Our address is still: Swissvale Post Office, Pittsburgh, Pennsylvania 15218.

The only official change will be one of identification. The same organization will conduct operations from the same locations—and we'll continue to be acutely responsive to the need for more advanced control and communications equipment for rail, mass transit, aerospace and industrial applications.

Purpose of the switch? To keep abreast of today's changing market needs and better identify our association with WABCO—one of America's 300 largest industrial complexes, with plants in thirteen states and operations throughout the free world. WABCO produces 35 major product lines, ranging from micro-miniature satellite components to rock crushers to automated control systems.

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Where a blend of technologies . . . hydraulics . . . electronics . . . geophysics . . . pneumatics . . . fluidics . . . biochemistry . . . avionics . . . brings forth products better designed to meet today's changing market needs.

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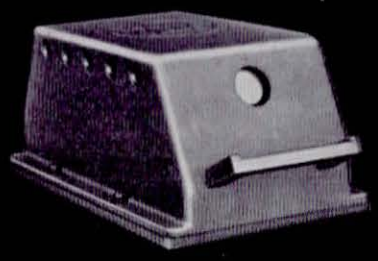
Why spend the capital to buy it?

What about service?

The Servosafe® Hot Box Detective System



Let's face it, the purchase of a Servosafe® Hot Box Detective System is a capital investment. When you buy such a system you're going to be spending a substantial amount of money.

The thing to remember is that you're not buying hardware alone—you're buying *a data processing cost control system!* Compare the cost of a Detective System with that of a small computer, and you'll realize it's a relatively modest investment. For that investment you can have a record of every journal that has passed the scanners.

And for that investment—because of the very nature of the system—bearings that are running hot are located so that something can be done about them before they fail. Records show that only one out of ten abnormal journals detected by the Hot Box Detective System has needed a new wheel set. With the old visual detection methods, nine out of ten journals had to have a new wheel set. The savings in repair and shop work can be immense!

To be blunt, you buy our system to avoid one of the greatest capital losses a railroad faces—a wreck. Our system locates hot boxes before they result in axle burn-offs that are the largest single cause of derailments.

You can't—and we can't—estimate the cost of a wreck in advance. We can only quote what one railroad official said to us: *". . . Save one wreck . . . and the Servosafe Hot Box Detective System has paid for itself."*

If cost control is a prime management objective for you, consider the Servosafe Hot Box Detective System. We'll be glad to answer all your questions about it. Write us at the address shown at right. Or call collect.

In essence, you get the service you need wherever and whenever you need it. For example, the Hicksville headquarters of Servo's Railroad Products Division maintains a completely staffed Application Engineering Group. These Servosafe® specialists will study your operations and help your personnel in planning the type of Servosafe Hot Box Detective installations you need right from the beginning.

Next, Servo always furnishes field engineering services to assist you through the initial startup of your systems. Complete instruction manuals are provided for your staff, and Servo will train your personnel in system operations and procedures. This training can take place at a location on your railroad.

The course comprises operation, maintenance, servicing and trouble shooting all components of the Servosafe systems. Servo school graduates have the knowledge and competence that enable low-cost, efficient system maintenance.

And Servo field engineers are ready to help you with on-the-spot service in any way they can. Servo can always get skilled help to you—fast—when you need assistance. As for repairs and spare parts, Servo takes pride in handling and shipping them promptly and efficiently.

So, if it's a question of service, we've got the answers.

Protected under one or more of the following U.S. Patent Nos.: 2,880,309 and 2,963,575. Other U.S. and Foreign Patents Pending.

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Write for a free brochure on the Servosafe Hot Box Detective—the electronic journal bearing monitor that cuts railroad operating costs. Servo corporation of america, 111 new south road, hicksville, new york 11802, 516-938-9700

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